SHELL BOILERS

AND OTHER PRODUCTS

EDWIN DANKS & CO. (OLDBURY) LIMITED,

OLDBURY, Near BIRMINGHAM.

February, 1939. Code Word: "YTELLRAD No. 051 B

EDWIN DANKS & CO. (OLDBURY) LIMITED

ESTABLISHED 1862.
(A BABCOCK & WILCOX ORGANISATION)

LANCASHIRE CORNISH MULTITUBULAR
SCOTCH ECONOMIC VERTICAL WASTE HEAT

BOILERS

TANKS AND VESSELS
MISCELLANEOUS
STRUCTURAL WORK

OLDBURY BOILER WORKS - OLDBURY, Nr. Birmingham.

Telegrams : "BOILER, OLDBURY." Telephone No.: BROADWELL **1381, 1382, 1383**

LIST OF MANUFACTURES

BOILERS

Lancashire of all Types — Cornish
Multitubular — Scotch
Economic — Vertical
Complete Boiler Plant — Waste Heat

TANKS AND VESSELS

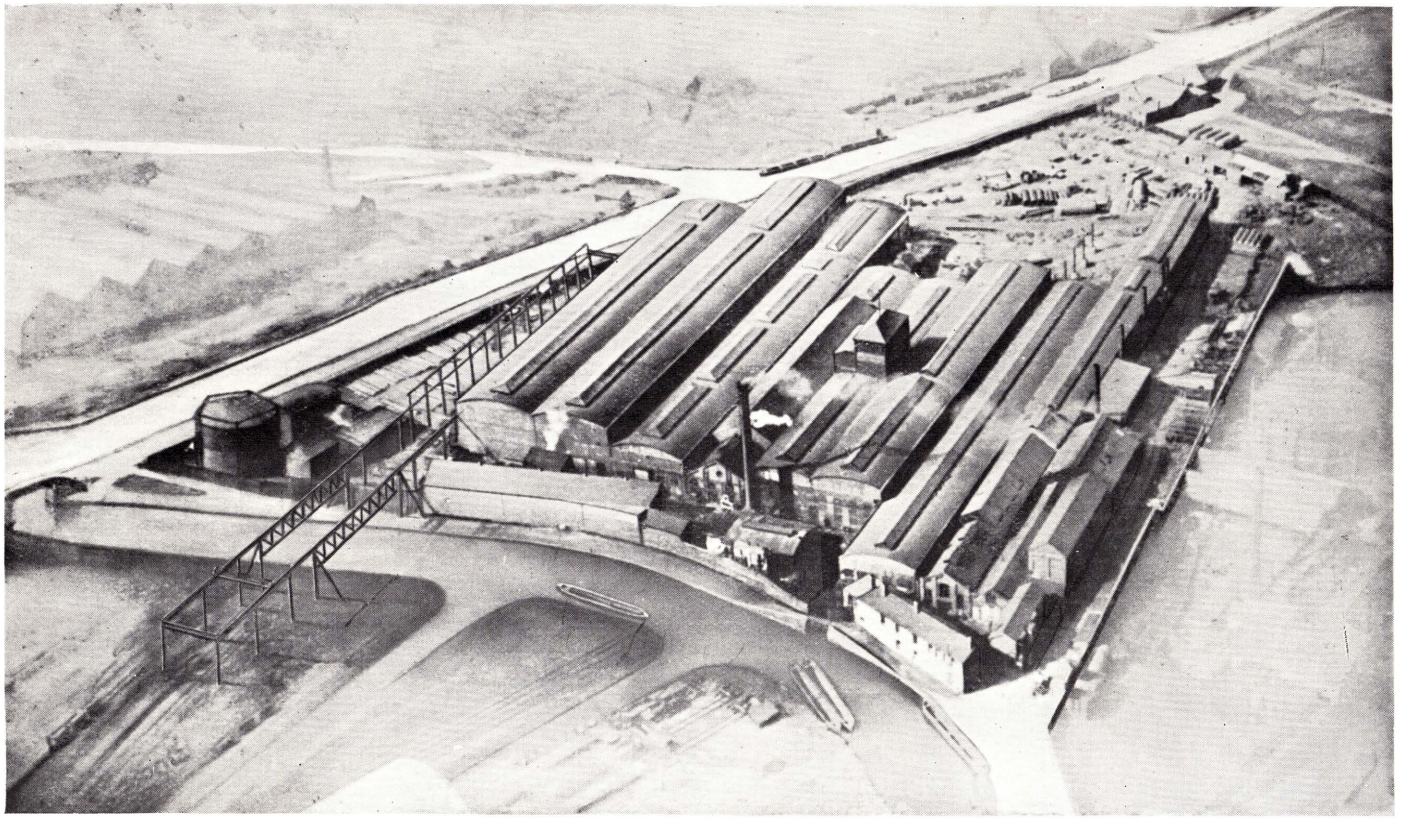
Railway Wagon Tanks — Oil Storage Tanks
Air and Steam Receivers — Water Tanks
Rubber Vulcanizers — Impregnators
Cement Kilns — Coal Washers
Rotary Silk Mixers — Separators, Etc.

MISCELLANEOUS

Plain and Corrugated Annealing Covers
Presswork of all Descriptions
Gas Mains — Pipework
High Pressure — Boiler Repairs
Steam and Water

STRUCTURAL WORK

Steel Chimneys—Self Supporting and Guyed
Uptakes — Coal and Ash Bunkers
Flues — Air Ducts — Columns
Girders — Crane Girders
Steel Framed Buildings and Structures
Elevator and Conveyor Steelwork



Works of Edwin Danks & Co. (Oldbury) Ltd., Oldbury.

Foreword

THIS new and abridged catalogue is issued particularly for the use of steam raisers and engineers, and contains, in a convenient form, typical examples of the wide range of engineering products manufactured by Edwin Danks & Co. (Oldbury) Ltd.

During recent years, the Oldbury Works have been very considerably enlarged, and many new and up-to-date machines have been added to an already extensive plant for the manufacture of all classes of steam raising and steam using appliances and structural and other steel work relative thereto.

The high standard of workmanship and finish, exemplified over many years by the firm's Lancashire boiler, has been extended to all new branches of construction, and prospective purchasers may confidently rely on this high standard being maintained.

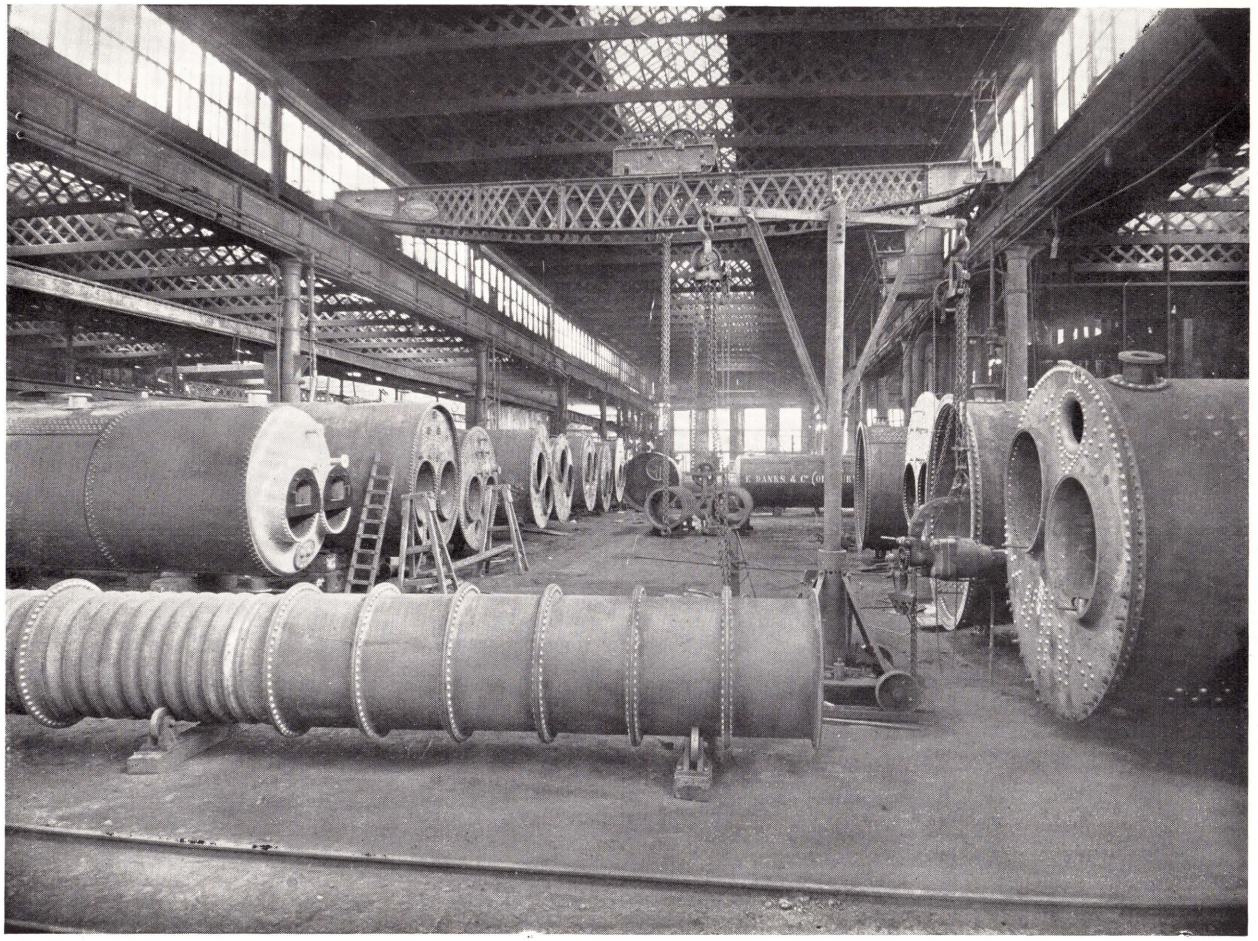
While this catalogue will serve as a guide to the general construction of the firm's standard apparatus, they are always pleased to submit special schemes embodying the particular requirements of individual clients, and they will be glad to hear from prospective users who may have particular schemes in contemplation.

Special attention has been devoted to the question of economical and efficient production, which enables the firm to put forward attractive prices comparing favourably with those of their competitors, at the same time maintaining the highest standard of quality and workmanship.

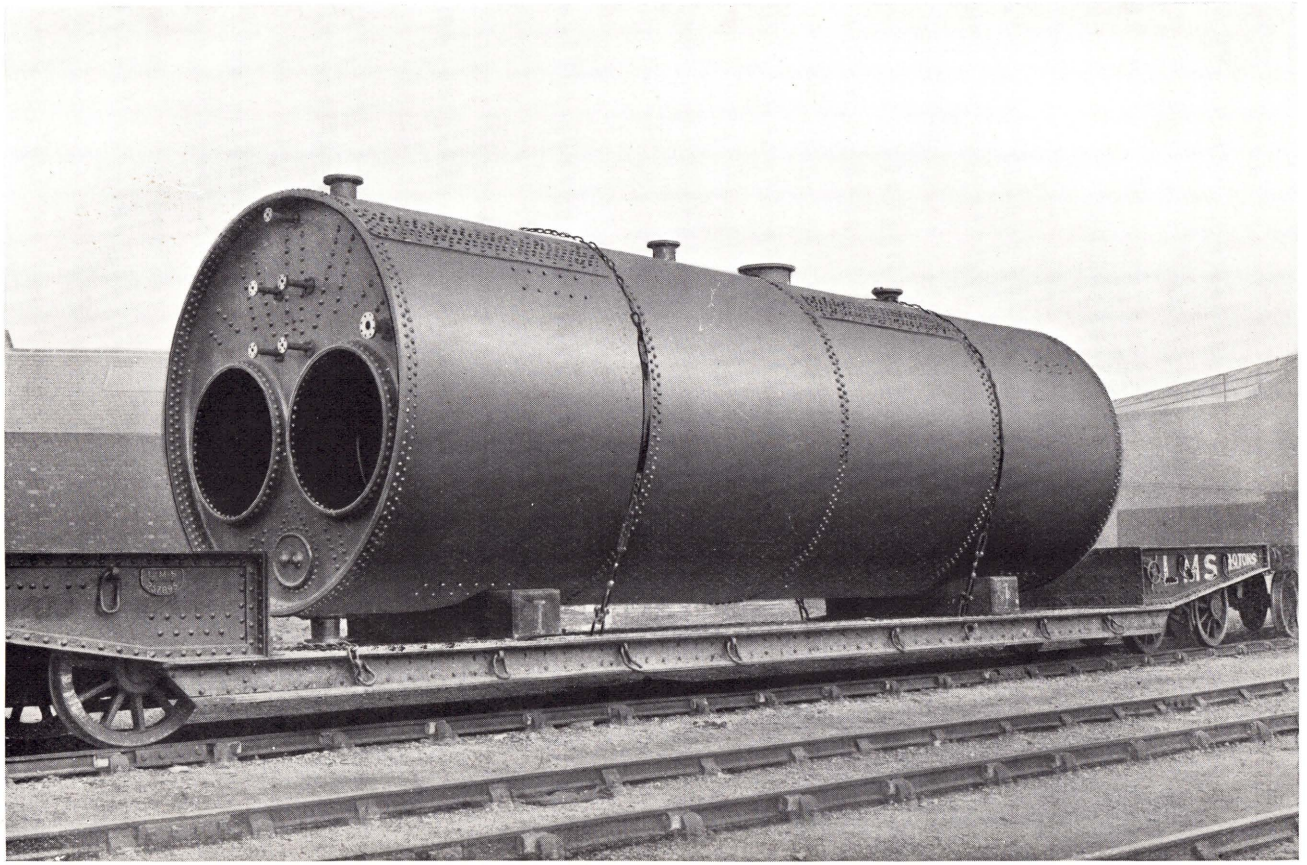
Engineers and other prospective purchasers who are interested in the firm's products are cordially welcomed at the Works, where every opportunity will be given them to examine in detail the excellence of manufacture.

The firm are much indebted to their many friends for the confidence placed in them in the past, and have pleasure in assuring them that their enquiries and recommendations in connection with future business will continue to receive the strictest and most careful attention.

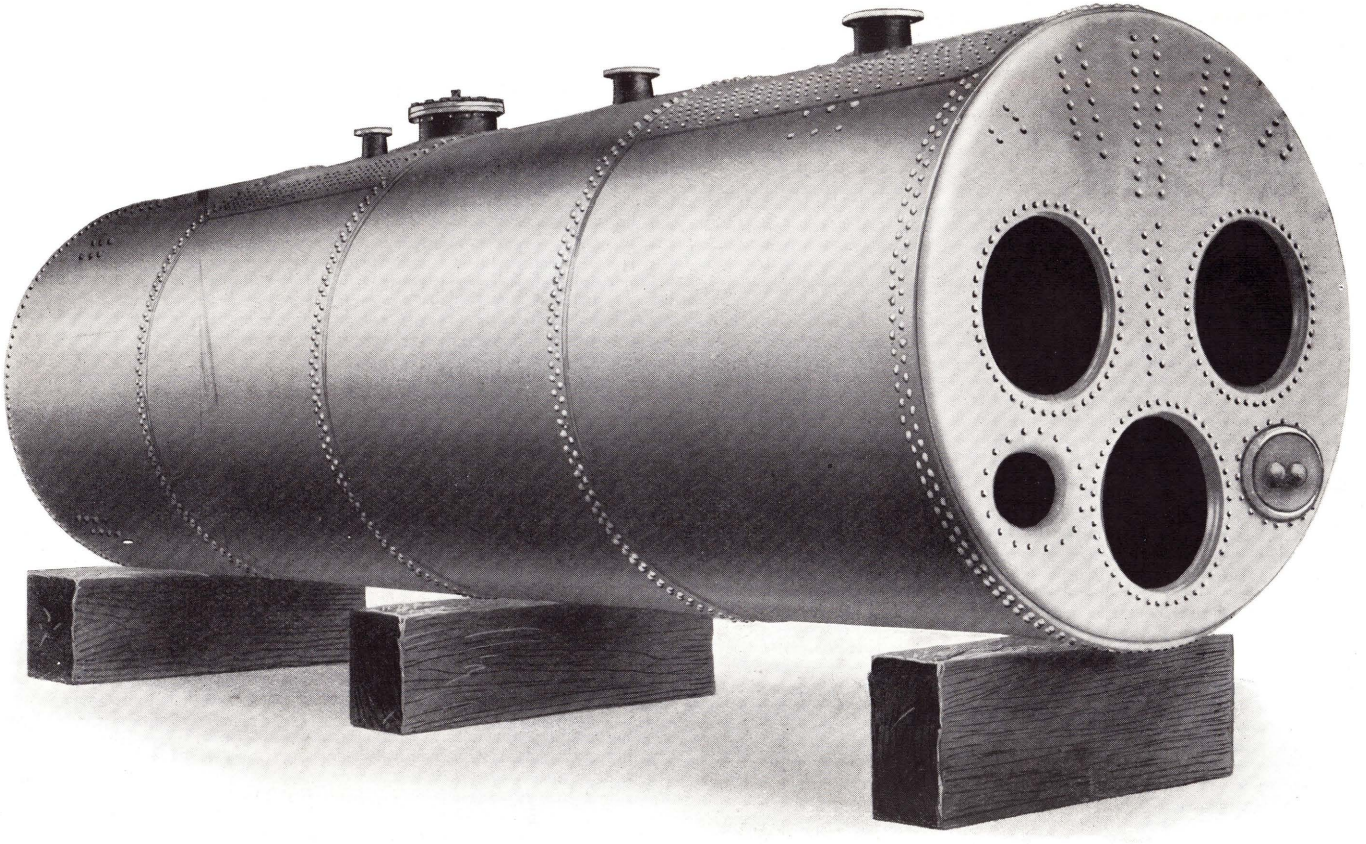
EDWIN DANKS & COMPANY (OLDBURY) LIMITED.



Edwin Danks & Co. (Oldbury) Ltd. *Boiler Shop Looking East.*



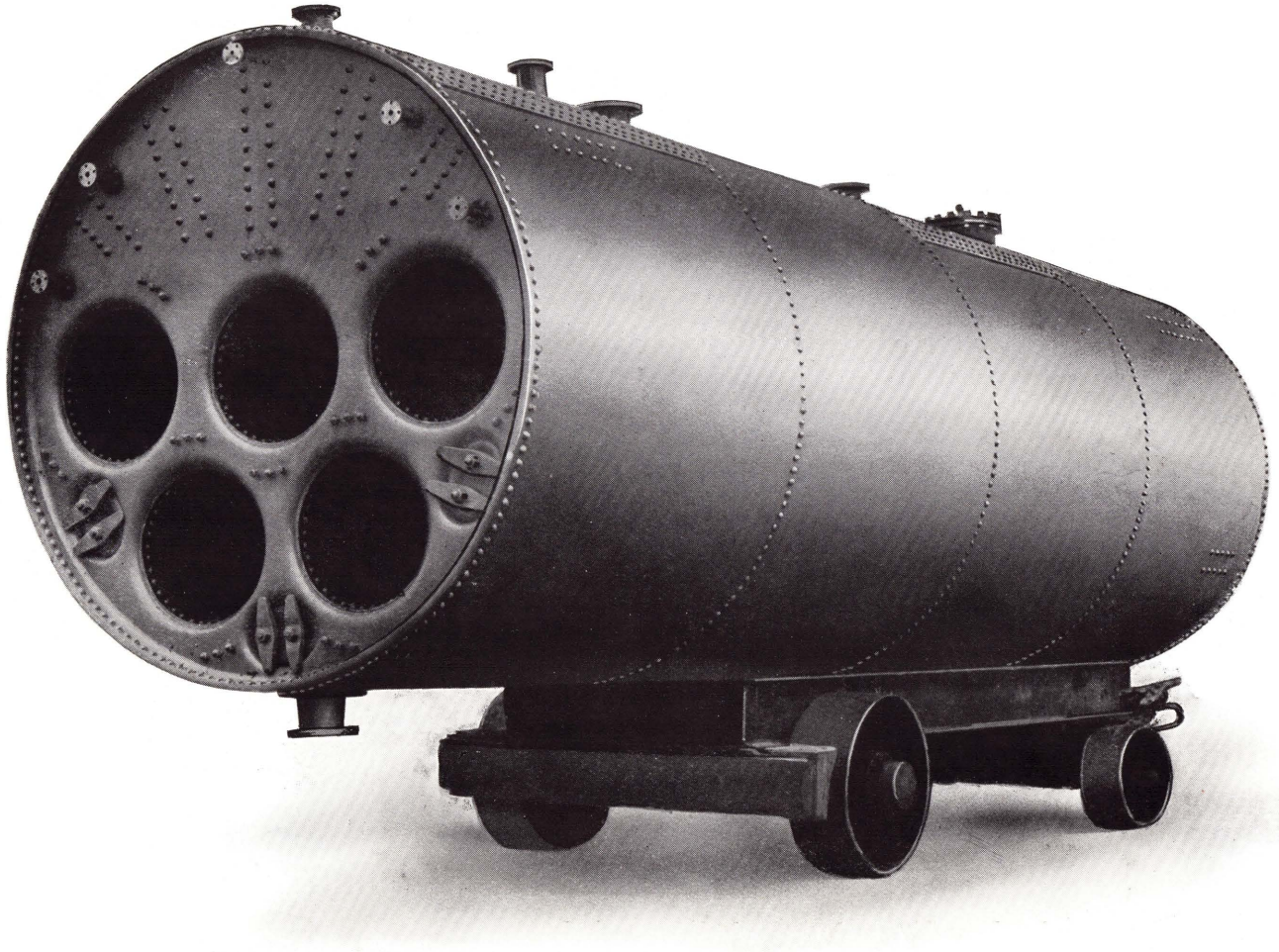
Edwin Danks & Co. Flanged-ended Lancashire Boiler. (*Weight* 40 *Tons*). *Mounted on Truck.*



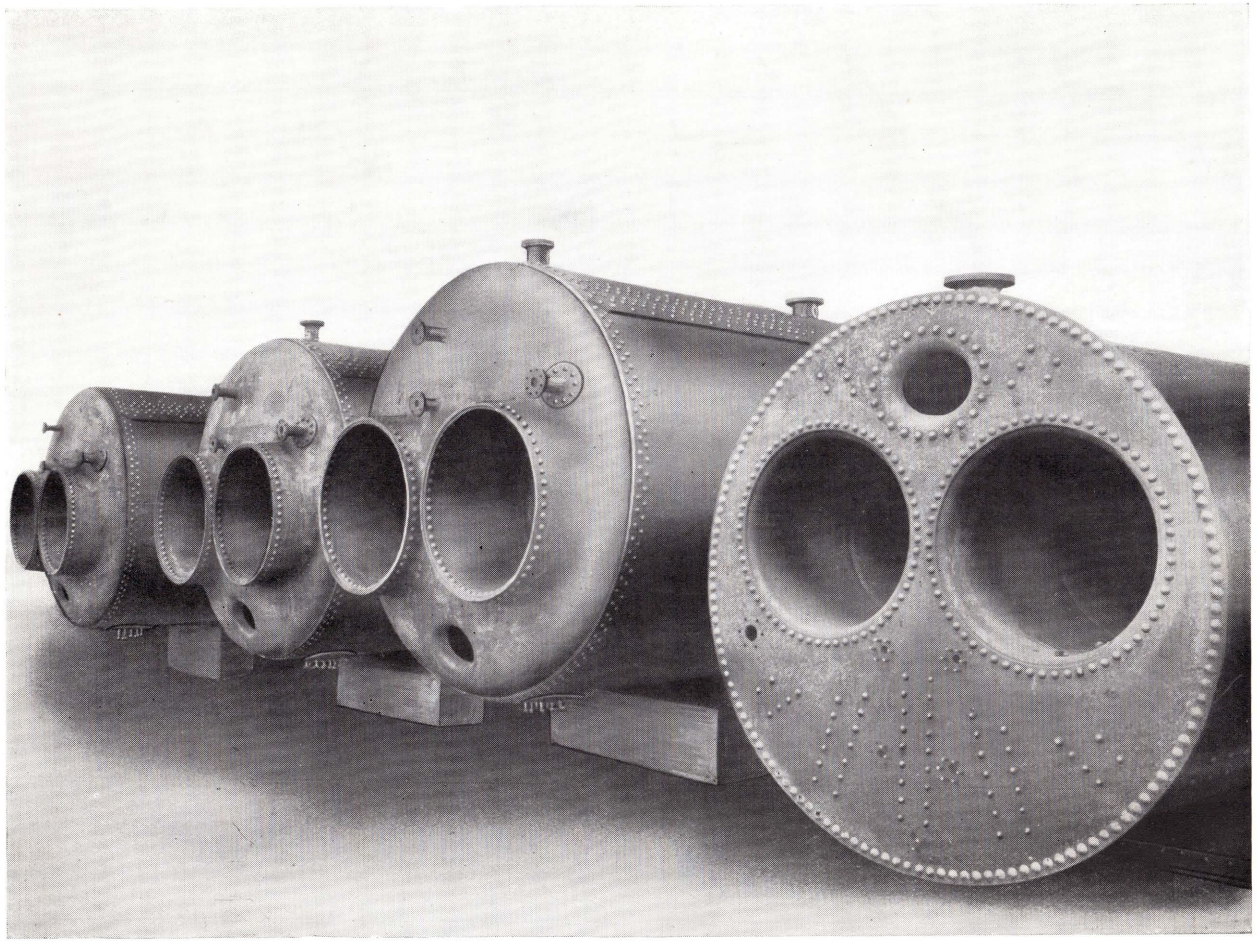
Edwin Danks' Special Three-flued Cylindrical Boiler. *For the utilisation of waste heat.*

The above type of boiler has been specially designed for the purpose of utilising waste gas from furnaces, and is constructed with either three or five flues. These can be plain or corrugated as desired.

Full particulars, specification and estimates will be submitted on application.



Edwin Danks' Special Five-flued Cylindrical Boiler, designed for working in connection with Waste Gases from Furnaces, etc.



Edwin Danks & Co. (Oldbury) Ltd. *Dish-ended and Flat-ended Lancashire Boilers.*

LANCASHIRE BOILERS

Edwin Danks & Co. (Oldbury) Ltd. are manufacturers of all types of Lancashire Boilers, and their long experience in this class of boiler construction enables them to advise clients as to the most suitable unit to be adopted for their particular requirements. They are at all times pleased to submit schemes embodying the latest practice in steam raising plant.

The three principal designs adopted, namely Flat-Ended (Angle-Ring), Flanged-Ended and Dish-Ended, are illustrated in the following pages, where a general description and specification are given with each type.

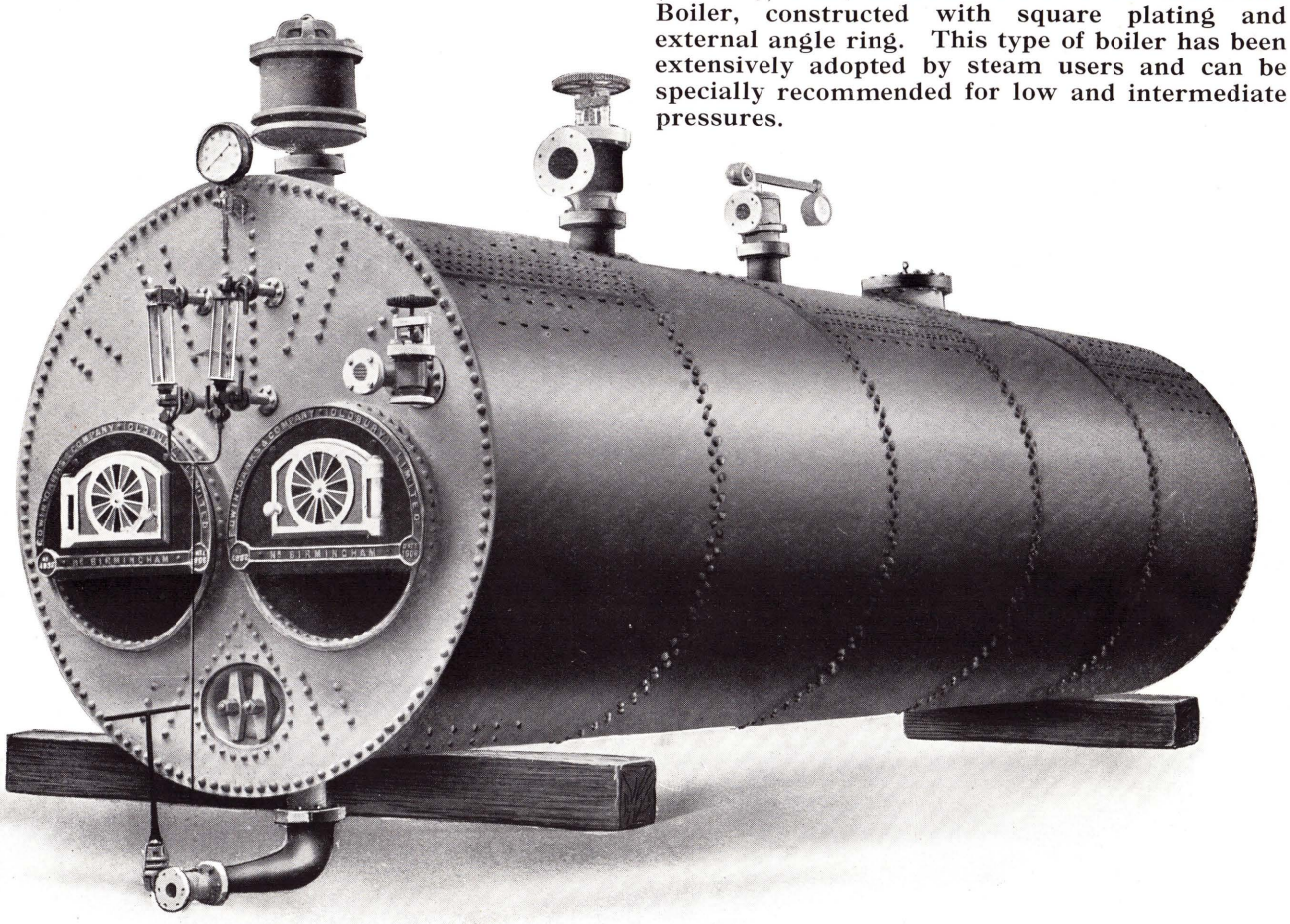
Below is given a list of the standard sizes of Lancashire boilers manufactured by Edwin Danks & Co. (Oldbury) Ltd. The table also shows the grate area, heating surface, and the approximate evaporative capacity of the boilers. It should be noted that the evaporation given is based on the assumption that economisers are used.

If the boiler feed water is cold, the evaporation will be reduced by one-seventh.

Estimates and tenders for boilers of special dimensions to meet clients' particular requirements can be supplied on request.

SIZE.	Diameter of Flues.	GRATE AREA.		Heating Surface.	Lbs. of Water evaporated per hour.	Indicated Horse Power of 20 lbs. of water.	Code Word.
		Length.	Area.				
ft. ins. × ft. ins.	ft. ins.	ft. ins.	sq. ft.	sq. ft.			
20 0 × 6 0	2 3	5 0	22½	400	2600	130	YILLILY
20 0 × 6 6	2 6	5 0	25	461	3000	150	YILLSCHEIT
22 0 × 6 6	2 6	5 6	27½	514	3400	170	YILLYBUS
24 0 × 7 0	2 9	6 0	33	636	4200	210	YILOAH
28 0 × 7 0	2 9	6 0	33	766	5000	250	YILOALOE
28 0 × 7 6	3 0	6 0	36	838	5500	275	YILOCISTO
30 0 × 7 6	3 0	7 0	42	905	6000	300	YILOCOLLA
30 0 × 8 0	3 2	7 0	44	983	6700	335	YILOCOPA
30 0 × 8 6	3 6	7 0	49	1080	8000	400	YILOFAGI
30 0 × 9 0	3 9	7 0	52½	1235	10000	500	YILOFILLA
30 0 × 9 6	4 0	7 0	56	1350	12000	600	YILOFORIA

The illustration shews Edwin Danks & Co. (Oldbury) Ltd., Standard Flat-ended Lancashire Boiler, constructed with square plating and external angle ring. This type of boiler has been extensively adopted by steam users and can be specially recommended for low and intermediate pressures.



Edwin Danks' Flat-ended (Angle-Ring) Lancashire Boiler.

FLAT-ENDED (ANGLE-RING) LANCASHIRE BOILERS

This type of boiler has been extensively adopted by steam users, and can be recommended for all pressures. It is constructed by Edwin Danks & Co. (Oldbury) Ltd. to the following general specification.

SHELL. The shell consists of parallel rings of steel plating, laid with inner and outer rows. Each ring consists of one plate only, and is constructed of Siemens-Martin open-hearth mild steel. The thickness of the plate ensures a factor of safety of five.

FLUES. The flues are two in number, and are formed in sections, each section consisting of one special mild steel plate, bent truly cylindrical and solid welded longitudinally by special machinery in conjunction with a water gas plant. The transverse joints are anti-collapsible, and no rivet heads are brought in contact with the fire.

ENDS. The front end is attached to the shell by a solid welded mild steel angle ring. The back end is flanged, and connects to the shell with this flange fixed inwardly.

STAYS. The ends are strengthened by means of gusset stays on the front and back ends above and below the flues, all stays being attached to the shell and ends by double angles.

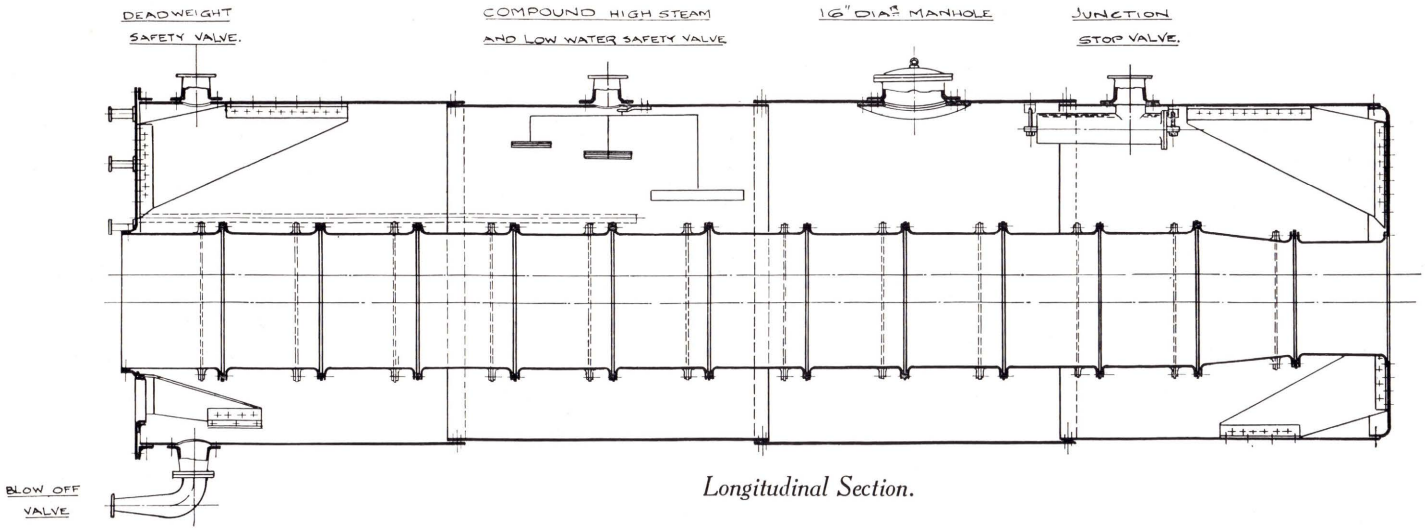
MANHOLES. One wrought steel raised manhole, riveted to the shell, is fitted to each boiler, and, in addition to this, there is an oval manhole at the front end of the boiler under the furnace, complete with a covered plate fitting flush with the end plate.

STANDPIPES. Suitable raised weldless steel standpipes are provided where necessary to connect the fittings to the boiler, the upper services being machined.

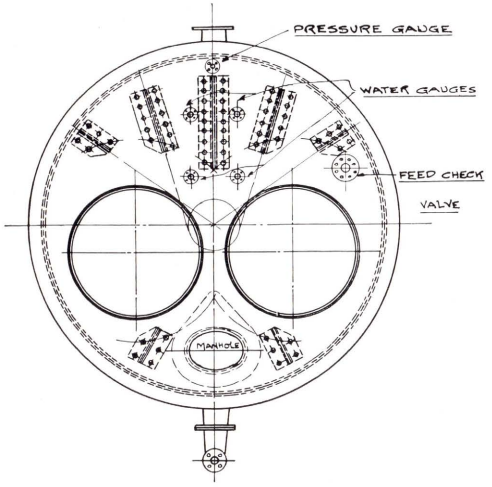
MOUNTINGS AND FITTINGS. The fittings supplied with the boiler include two safety valves, one feed check valve with internal feed pipe, one stop valve and perforated anti-priming pipe, one steam pressure gauge and syphon, two water gauges with protectors, one water level pointer, one blow-off valve, a cast steel elbow pipe, and the necessary fusible plugs, two complete sets of furnace fittings, a cast iron chequered foot plate and frame, two cast iron soot doors and frames, and two cast iron dampers with frame.

For export purposes or where specially desired, the boilers are fitted with low nozzles or pressed pads in place of high standpipes.

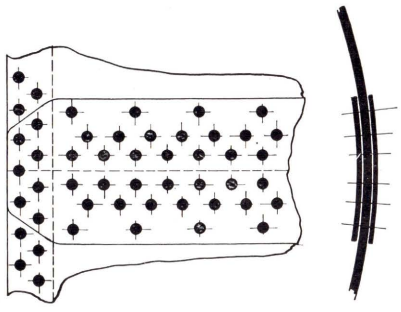
Manholes of the internal oval pattern are also fitted in the shell in place of the raised manhole.



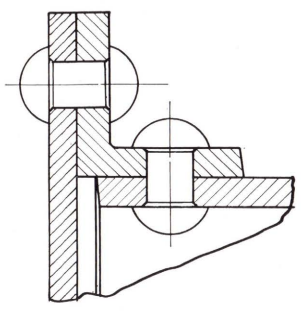
Longitudinal Section.



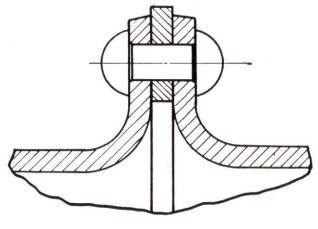
Front Elevation.



ENLARGED DETAIL
OF SHELL SEAMS

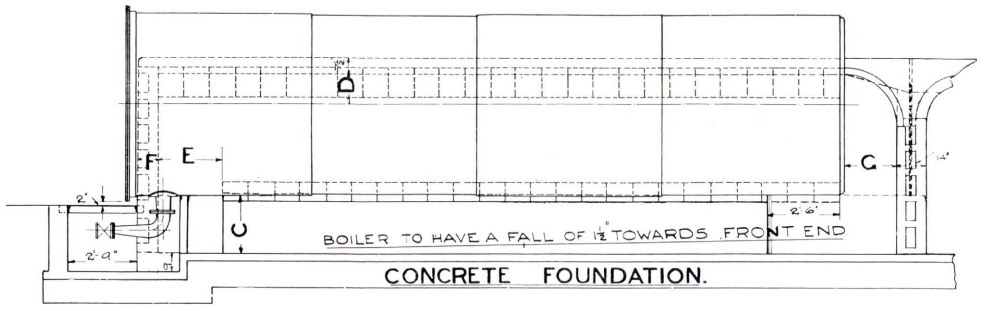


ENLARGED DETAIL
OF CONNECTION TO
FRONT END

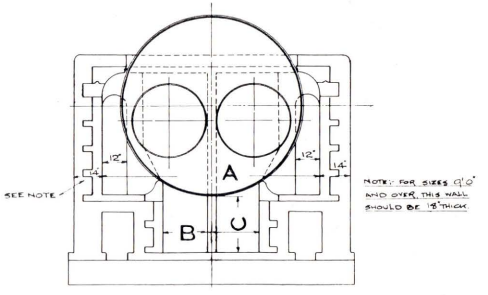


ENLARGED DETAIL
OF FLANGED SEAMS.

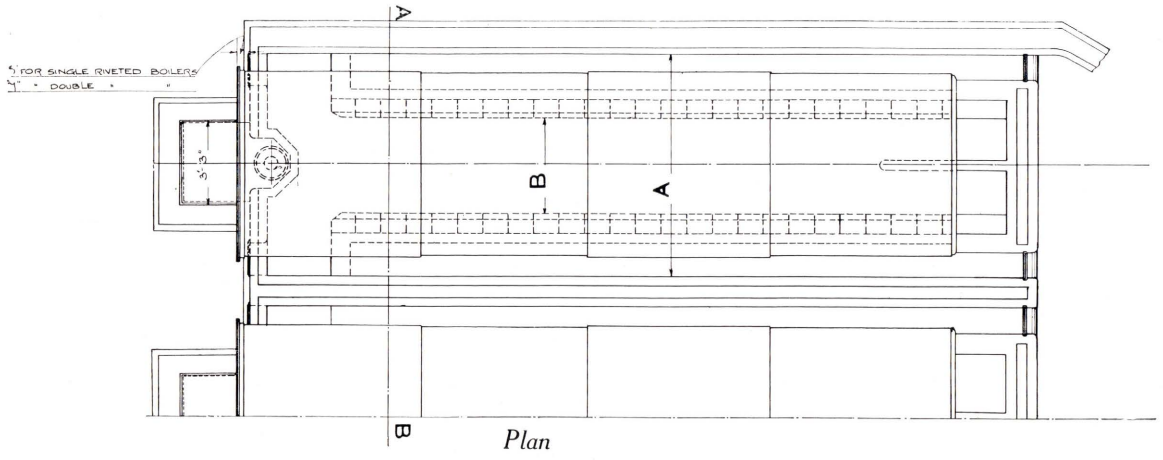
Standard Flat-ended (Angle-Ring) Lancashire Boiler.



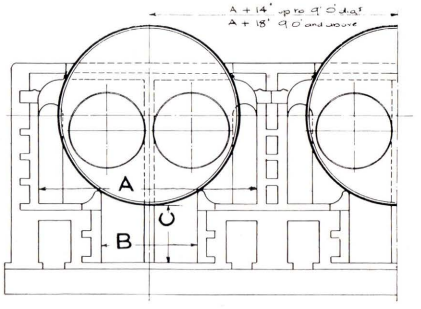
Longitudinal Section.



Section on A.B. for Single Boiler.



Plan



Section on A.B. for a Battery.

Standard Seating for Flat-ended (Angle-Ring) Lancashire Boiler.

SEATING PARTICULARS

for

FLAT-ENDED (ANGLE-RING) LANCASHIRE BOILERS

Diameter of Boiler.	A	B	C	D	E	F	Damper.	G	Code Word.	
ft. ins.	ft. ins.	ft. ins.	ft. ins.	ins.	ft. ins.	ins.	ft. ins. ft. ins.	ft. ins.		
10 0	12 0	5 3	3 0	18	3 6	14	6 0 × 1 0	2 6	YILOGLIFO	18 in. wall for these sizes.
9 6	11 6	5 0	2 9	18	3 6	14	6 0 × 1 0	2 6	YILOMA	
9 3	11 3	4 10½	2 6	18	3 3	14	6 0 × 1 0	2 6	YILONDIES	
9 0	11 0	4 9	2 6	18	3 0	14	5 6 × 1 0	2 6	YILOPES	
8 6	10 6	4 6	2 6	18	3 0	14	5 6 × 1 0	2 6	YILORGANO	14 in. wall for these sizes.
8 0	10 0	4 3	2 6	18	2 9	14	5 0 × 1 0	2 6	YILOSSERO	
7 6	9 6	4 0	2 6	18	2 9	14	5 0 × 1 0	2 6	YILOSTEO	
7 0	8 6	3 9	2 3	15	2 6	9	4 0 × 1 0	2 0	YILOTROGI	
6 6	8 0	3 6	2 3	15	2 6	9	4 0 × 1 0	2 0	YILPHAL	
6 0	7 6	3 3	2 3	15	2 6	9	4 0 × 1 0	2 0	YILPHION	

NOTE.—For telescopic boilers add 3 in. to size given in column "A."

FLANGED-ENDED LANCASHIRE BOILER

This type of boiler differs from the ordinary Flat-ended type in the front end, which is flanged outwardly for fixing to the shell. The front plate is also flanged outwardly to receive the flues, the rivet holes round the flue connections at the front end being drilled in position.

This method of construction prevents leakages and grooving in high pressure boilers. It may be noted particularly that the rivets are in shear instead of tension, and are consequently 50% stronger.

This construction prevents any undue strain on the joint, which cannot be sprung by excessive expansion and contraction. This type of end also lends itself easily to the application of non-conducting composition, all the fittings being carried clear of standpipes, and is constructed by Edwin Danks & Co. (Oldbury) Ltd. to the following specification :—

SHELL. The shell consists of parallel rings of steel plating, laid with inner and outer rows. Each ring consists of one plate only, and is constructed of Siemens-Martin open-hearth mild steel. The thickness of the plate ensures a factor of safety of five.

FLUES. The flues are two in number, and are formed in sections, each section consisting of one special mild steel plate, bent truly cylindrical and solid welded longitudinally by special machinery in conjunction with a water gas plant. The transverse joints are anti-collapsible, and no rivet heads are brought in contact with the fire.

ENDS. The front end is flanged outwardly for fixing to the shell. It is also flanged outwardly to receive the flues, the rivet holes round the flue connections at the front end being drilled in position.

STAYS. The ends are strengthened by means of gusset stays on the front and back ends above and below the flues, all stays being attached to the shell and ends by double angles.

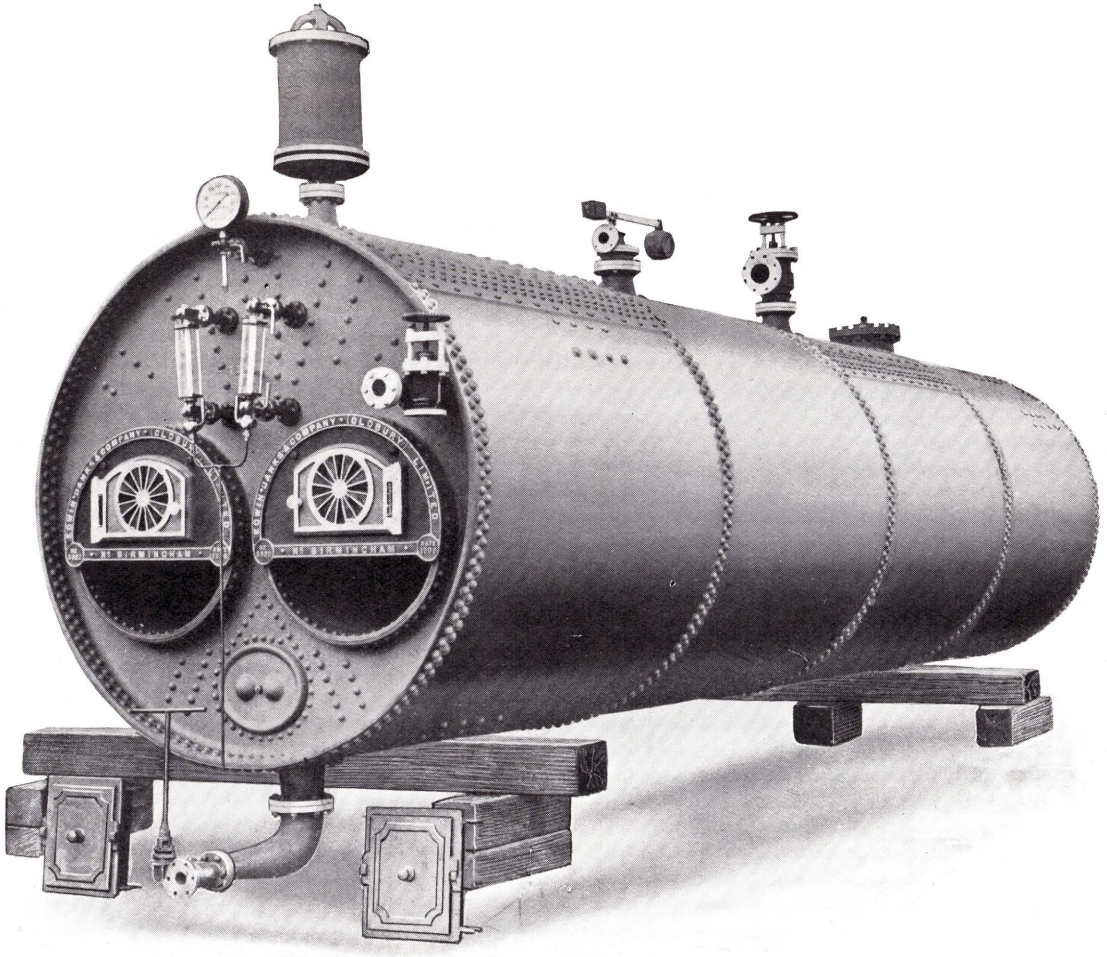
MANHOLES. One wrought steel raised manhole riveted to the shell is fitted to each boiler, and, in addition to this, there is an oval manhole at the front end of the boiler under the furnace, complete with a covered plate fitting flush with the end plate.

STANDPIPES. Suitable raised weldless steel standpipes are provided where necessary to connect the fittings to the boiler, the upper surfaces being machined.

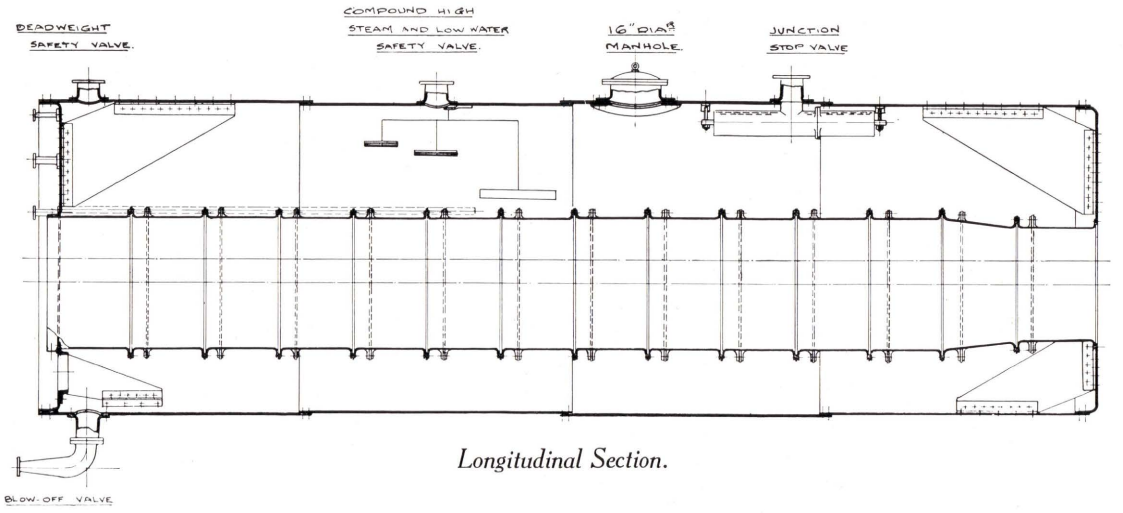
MOUNTINGS AND FITTINGS. The fittings supplied with the boiler include two safety valves, one feed check valve with internal feed pipe, one stop valve and perforated anti-priming pipe, one steam pressure gauge and syphon, two water gauges with protectors, one water level pointer, one blow off valve, a cast steel elbow pipe and the necessary fusible plugs, two complete sets of furnace fittings, a cast-iron chequered foot plate and frame, two cast-iron soot doors and frames, and two cast-iron dampers with frame.

For export purposes or where specially desired, the boilers are fitted with low nozzles or pressed pads in place of high standpipes.

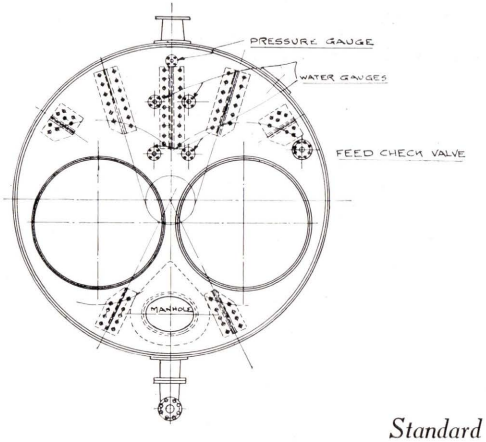
Manholes of the internal oval pattern are also fitted in the shell in place of the raised manhole.



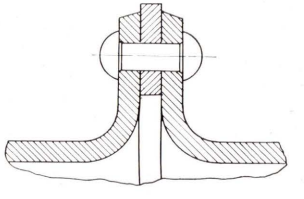
Edwin Danks' Improved Inverted Flanged-ended Lancashire Boiler.



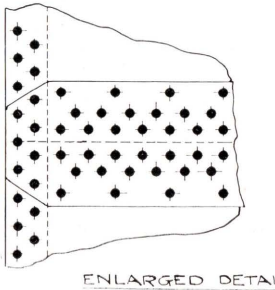
Longitudinal Section.



Front Elevation.

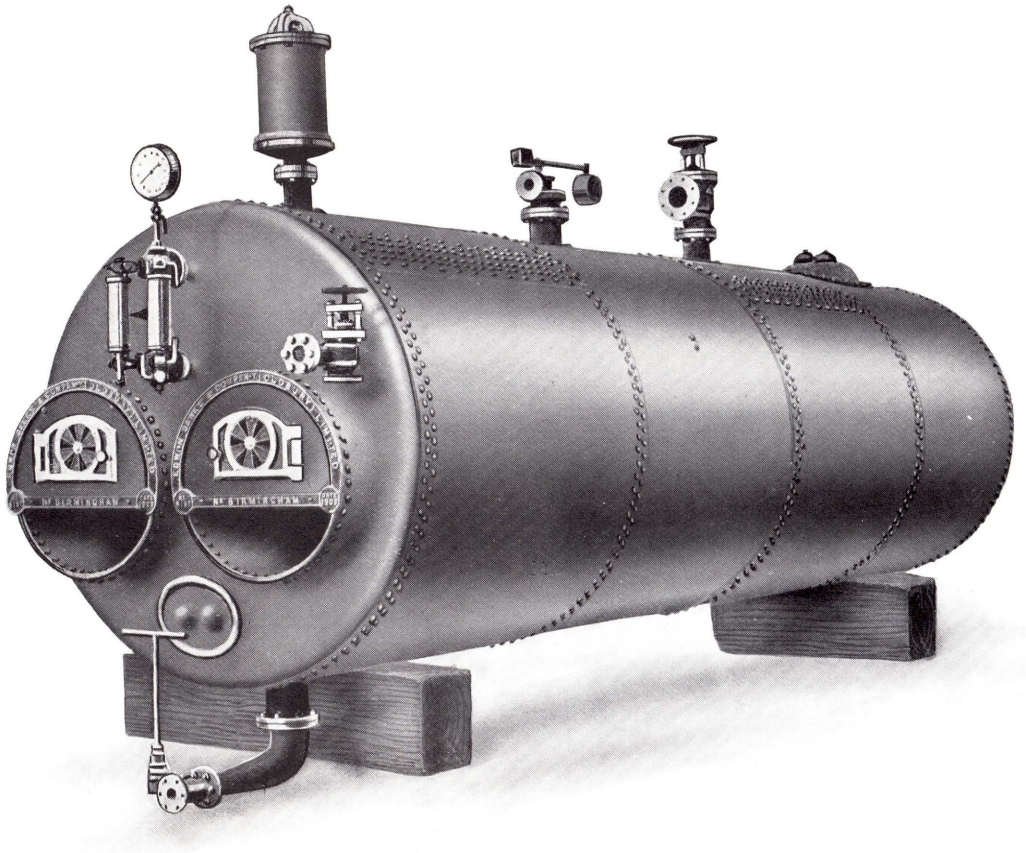


ENLARGED DETAIL OF FLANGED SEAMS



ENLARGED DETAIL OF SHELL SEAMS

Standard Inverted Flanged-ended Lancashire Boiler.



Edwin Danks' Dish-ended Lancashire Boiler.

DISH-ENDED LANCASHIRE BOILERS

Edwin Danks & Co. (Oldbury) Ltd., Standard Dish-Ended Lancashire Boiler, can be supplied for all pressures.

The advantages of the Dish-Ended Lancashire Boiler over ordinary Flat-Ended or Flanged-Ended Boilers are numerous. Gusset stays are entirely dispensed with, and the boiler, therefore, can be easily cleaned internally. No angle rings are required as the ends are flanged to the shell of the boiler. The rivets connecting the shell and flues to the endplates are in shear instead of in tension, and all excessive strain on the joints is avoided.

In this type of boiler, corrugated flues are essential owing to the rigidity of the ends, but it is recommended that the portion of the flue forming the furnace should be left plain. These boilers are particularly suitable for high pressures, and the design is recommended with every confidence ; they are constructed to the following general specification :—

SHELL. The shell consists of parallel rings of steel plating, laid with inner and outer rows. Each ring consists of one plate only and is constructed of Siemens-Martin open-hearth mild steel. The thickness of the plate ensures a factor of safety of five.

FLUES. The flues are two in number, and are formed in sections, each section consisting of one special mild steel plate, bent truly cylindrical and solid welded longitudinally by special machinery in conjunction with a water gas plant. The transverse joints are anti-collapsible, and no rivet heads are brought in contact with the fire.

Corrugated Flues are supplied with this type of boiler, but it is recommended that the sections forming the furnaces be left plain.

ENDS. The front and back ends are dished and flanged, and connect to the shell with the flanges fixed inwardly. The front end is flanged outwardly, and the back end inwardly to receive the flues.

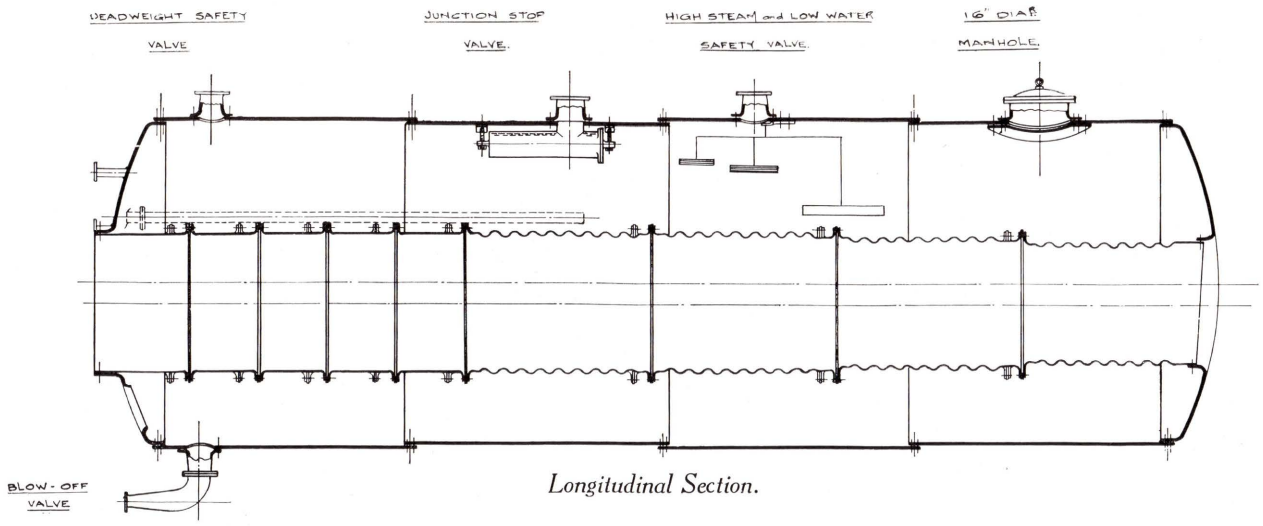
MANHOLES. One wrought steel raised manhole riveted to the shell is fitted to each boiler, and in addition to this, there is an oval manhole at the front end of the boiler under the furnace, complete with a covered plate fitting flush with the end plate.

STANDPIPES. Suitable raised weldless steel standpipes are provided where necessary to connect the fittings to the boiler, the upper surfaces being machined.

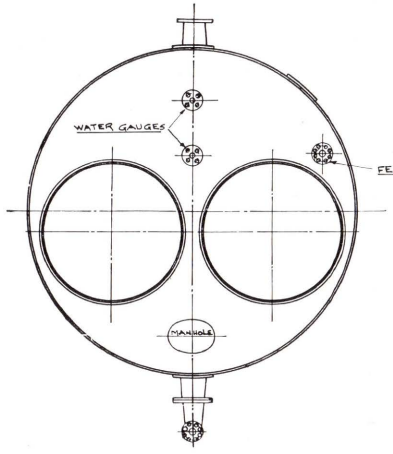
MOUNTINGS AND FITTINGS. The fittings supplied with the boiler include two safety valves, one feed check valve with internal feed pipe, one stop valve and perforated anti-priming pipe, one steam pressure gauge and syphon, two water gauges with protectors, one water level pointer, one blow off valve, a cast steel elbow pipe and the necessary fusible plugs, two complete sets of furnace fittings, a cast-iron chequered foot plate and frame, two cast-iron soot doors and frames, and two cast-iron dampers with frame.

For export purposes or where specially desired, the boilers are fitted with low nozzles or pressed pads in place of high standpipes.

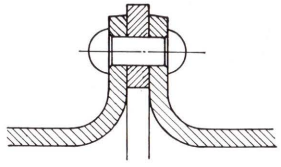
Manholes of the internal oval pattern are also fitted in the shell in place of the raised manhole.



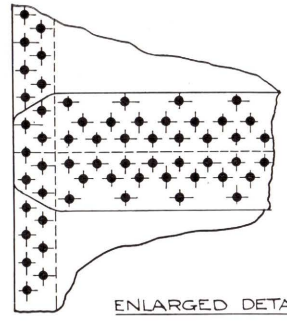
Longitudinal Section.



Front Elevation.

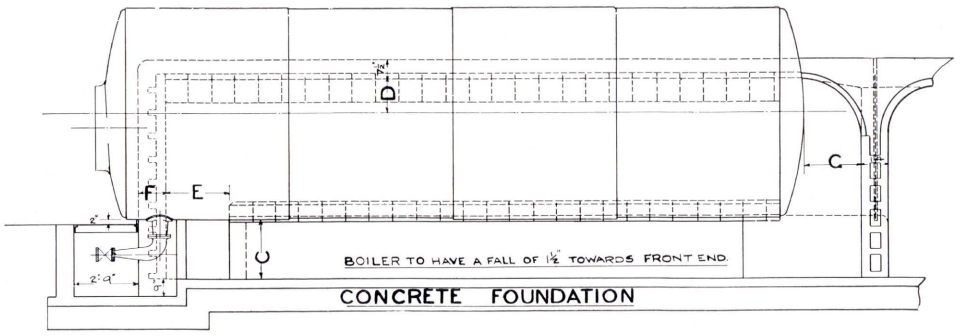


ENLARGED DETAIL OF FLANGED SEAMS

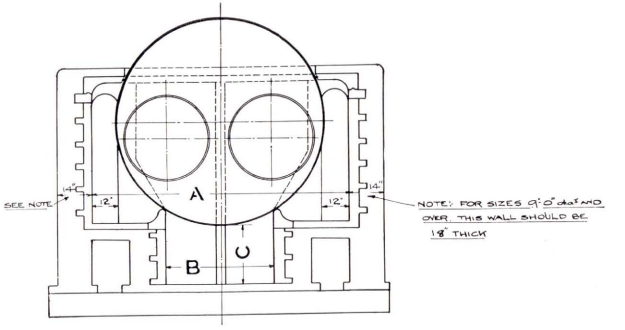


ENLARGED DETAIL OF SHELL SEAMS.

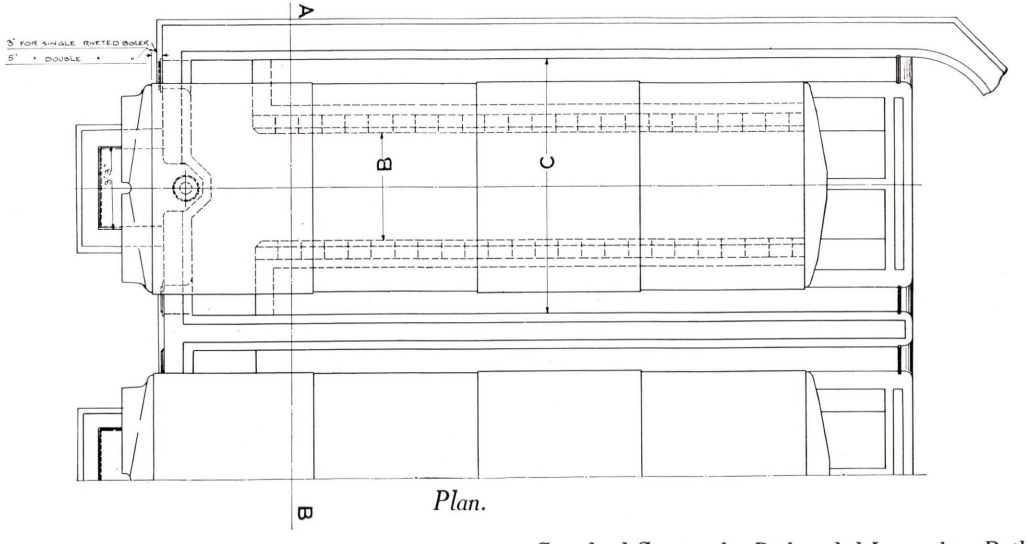
Standard Dish-ended Lancashire Boiler.



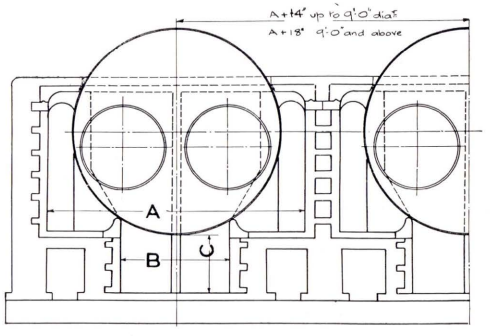
Longitudinal Section



Section on A.B. for Single Boiler.



Plan.



Section on A.B. for a Battery.

Standard Seating for Dish-ended Lancashire Boiler.

SEATING PARTICULARS

for

DISH-ENDED LANCASHIRE BOILERS

Diameter of Boiler.	A	B	C	D	E	F	Damper.	G	Code Word.	
ft. ins.	ft. ins.	ft. ins.	ft. ins.	ins.	ft. ins.	ins.	ft. ins. × ft. ins.	ft. ins.		
10 0	12 0	5 3	3 0	18	3 6	14	6 0 × 1 0	2 6	YILPHIUM	18 in. wall for these sizes.
9 6	11 6	5 0	2 9	18	3 6	14	6 0 × 1 0	2 6	YILPIA	
9 3	11 3	4 10½	2 6	18	3 3	14	6 0 × 1 0	2 6	YILSILIS	
9 0	11 0	4 9	2 6	18	3 0	14	5 6 × 1 0	2 6	YILUMIUS	
8 6	10 6	4 6	2 6	18	3 0	14	5 6 × 1 0	2 6	YILURELLE	14 in. wall for these sizes.
8 0	10 0	4 3	2 6	18	2 9	14	5 0 × 1 0	2 6	YILUROIDE	
7 6	9 6	4 0	2 6	18	2 9	14	5 0 × 1 0	2 6	YILVADO	
7 0	8 6	3 9	2 3	15	2 6	9	4 0 × 1 0	2 0	YILVANITE	
6 6	8 0	3 6	2 3	15	2 6	9	4 0 × 1 0	2 0	YILVANOS	
6 0	7 6	3 3	2 3	15	2 6	9	4 0 × 1 0	2 0	YILVEIRA	

NOTE.—For telescopic boilers add 3 in. to size given in column "A."

CORNISH BOILERS

Cornish Boilers are useful steam generators when only a small amount of power is required. They are constructed either flat or dish-ended (the accompanying illustration shows a dish-ended boiler), and are particularly suitable for heating installations, small steam plants, laundries and similar purposes.

It should be noted that the boiler has a single flue which is fixed eccentric to the shell. This arrangement not only increases circulation of the water in the boiler, but also gives better access for cleaning.

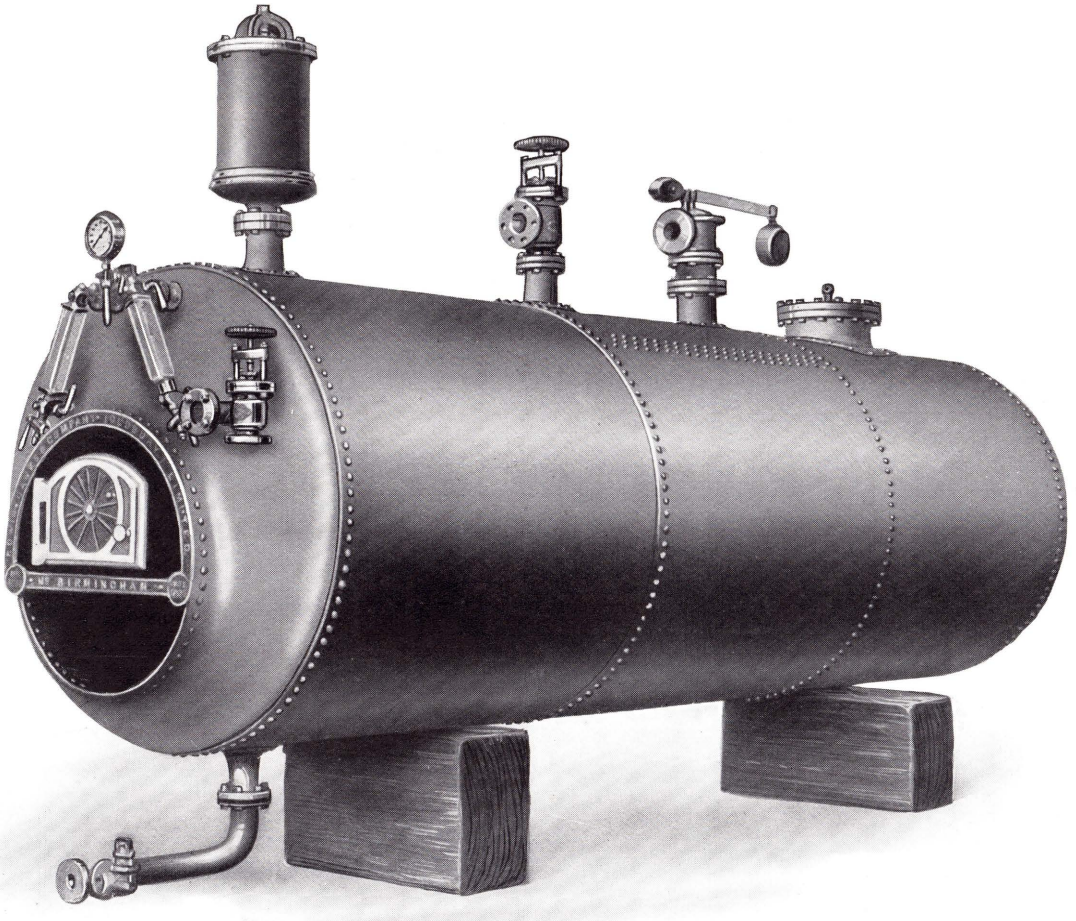
Standard sizes, together with grate area heating service and approximate evaporations, are given in the accompanying table. It should be noted that the evaporations given are based on the assumption that economisers are used.

If the boiler feed water is cold, the evaporation will be reduced by one-seventh.

Standard Sizes of Cornish Boilers.

SIZE.						Diameter of Flue.	GRATE.		Heating Surface.	Lbs. of Water evaporated per hour.	Indicated Horse Power at 20 lbs. of water.	Nominal Horse Power.	Code Words.
							Length.	Area.					
ft.	ins.		ft.	ins.		ft. ins.	ft. ins.	sq. ft.	sq. ft.				
12	0	×	4	0		2 3	4 0	9	192	960	48	10	YILVERIZE
12	0	×	4	6		2 6	4 0	10	220	1100	55	11	YILVESCO
14	0	×	4	6		2 6	4 0	10	254	1270	63	13	YILVICOLA
16	0	×	5	0		2 9	5 0	$13\frac{3}{4}$	326	1630	81	16	YILVINHA
18	0	×	5	0		2 9	5 0	$13\frac{3}{4}$	354	1770	88	18	YILVIQUE
20	0	×	5	0		2 9	5 0	$13\frac{3}{4}$	408	2040	102	20	YILVIUS
16	0	×	5	6		3 0	5 0	15	342	1710	85	17	YILVOSA
18	0	×	5	6		3 0	5 0	15	382	1912	95	19	YILVOSOS
20	0	×	5	6		3 0	5 0	15	428	2140	107	21	YILVOSUM
18	0	×	6	0		3 3	5 0	$16\frac{1}{4}$	432	2160	108	21	YILYBES
20	0	×	6	0		3 3	5 0	$16\frac{1}{4}$	484	2420	121	24	YILYBUM
20	0	×	6	6		3 6	5 0	18	529	2645	131	26	YIMANDRE
24	0	×	6	6		3 6	6 0	21	552	3120	156	31	YIMAVERO

The above are our standard sizes of Cornish boilers, together with the grate area, heating surface, and evaporation.



Edwin Danks' Standard Dish-ended Cornish Boiler.

Cornish Boilers are manufactured by Edwin Danks & Co. (Oldbury) Ltd., to the following general specification :

SHELL. The shell consists of parallel rings of steel plating, laid with inner and outer rows. Each ring consists of one plate only, and is constructed of Siemens-Martin open-hearth mild steel. The thickness of the plate ensures a factor of safety of five.

FLUE. There is a single flue which is formed in sections, each section consisting of one special mild steel plate, bent truly cylindrical and solid welded longitudinally by special machinery in conjunction with a water gas plant. The transverse joints are anti-collapsible, and no rivet heads are brought in contact with the fire. The flue is fixed eccentric to the shell. In the Dish-end Boiler one section of the flue is corrugated.

ENDS. In the case of the Flat-Ended Boiler, the front end is attached to the shell by a solid welded mild steel angle ring. The back end is flanged, and connects to the shell with this flange fixed inwardly. The front end is flanged outwardly and the back end inwardly to receive the flue. In the case of the flanged-ended Boiler the front end is flanged outwardly for fixing to the shell. It is also flanged outwardly to receive the flue. In the case of the Dish-Ended Boiler, the front and back ends are dished and flanged and connect to the shell with the flanges fixed inwardly.

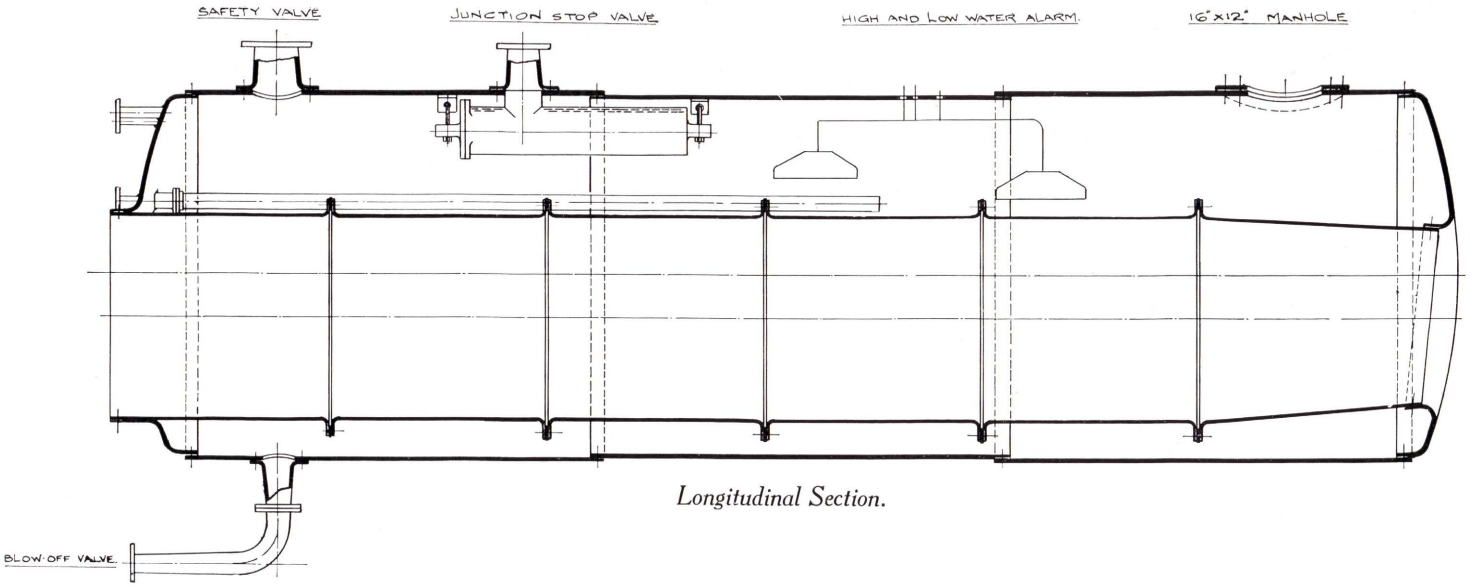
STAYS. In the case of the Flat-Ended and Flanged-Ended Boilers the ends are strengthened by means of gusset stays on the front and back ends above and below the flues, all stays being attached to the shell and ends by double angles. In the Dish-Ended Boiler there are no gussets or stays of any kind.

MANHOLE. One wrought steel manhole raised or internal is provided according to requirements.

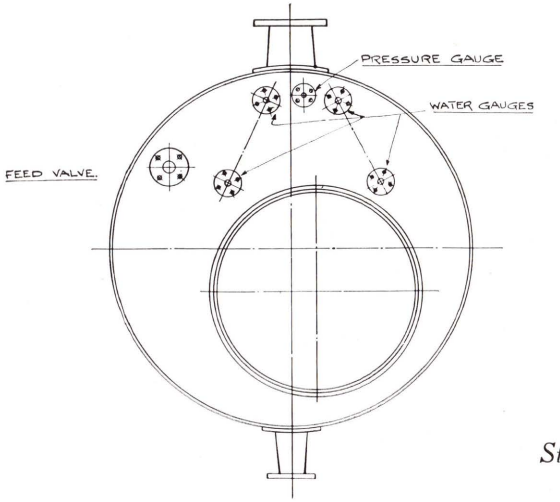
STANDPIPES. Suitable raised weldless steel standpipes are provided where necessary to connect the fittings to the boiler, the upper surfaces being machined.

MOUNTINGS AND FITTINGS. The fittings supplied with the boiler include one safety valve, one feed check valve with internal feed pipe, one stop valve and perforated anti-priming pipe, one steam pressure gauge and syphon, two water gauges with protectors, one water level pointer, one blow-off valve, a cast steel elbow pipe and the necessary fusible plug, one complete set of furnace fittings, a cast-iron chequered foot plate and frame, two cast-iron soot doors and frames, and one cast-iron damper with frame.

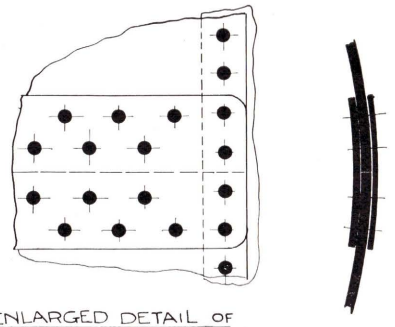
For export purposes, or where specially desired, the boilers are fitted with low nozzles or pressed pads in place of high standpipes.

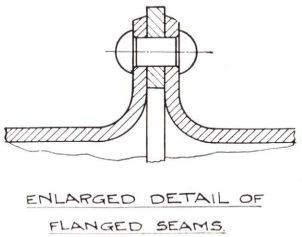


Longitudinal Section.

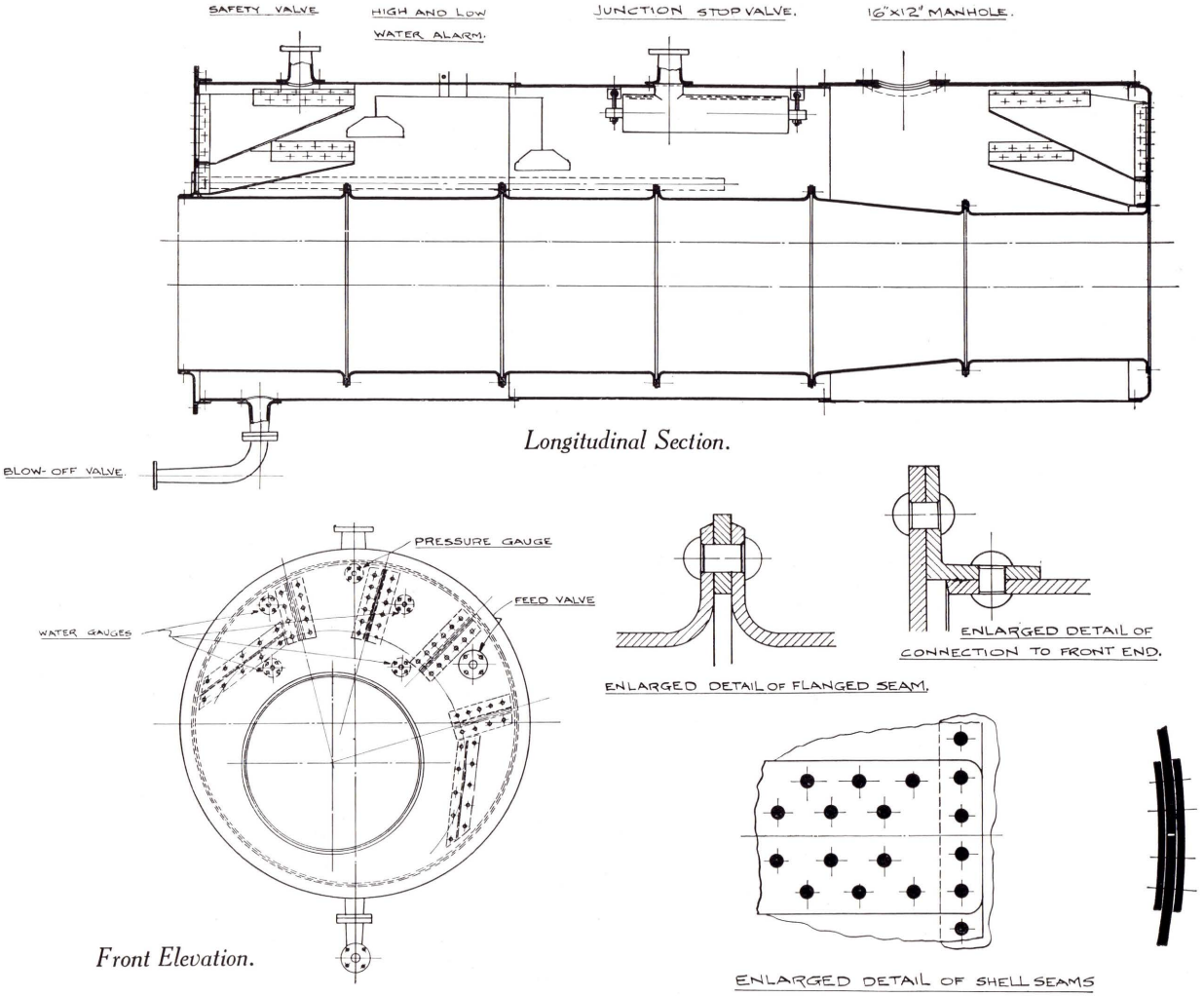


Front Elevation.





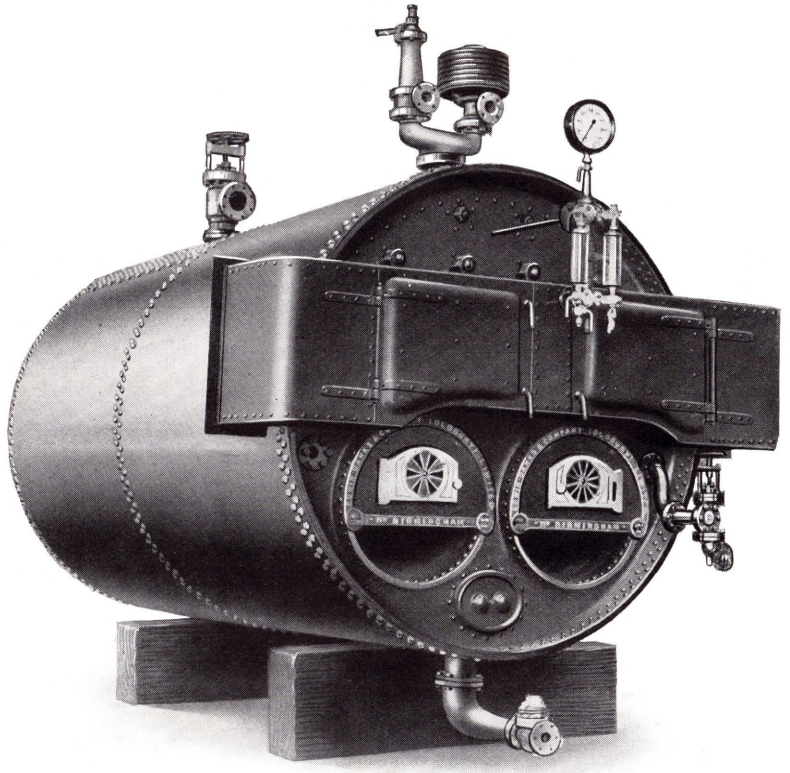
Standard Dish-ended Cornish Boiler.



Longitudinal Section.

Front Elevation.

Standard Flat-ended Cornish Boiler.



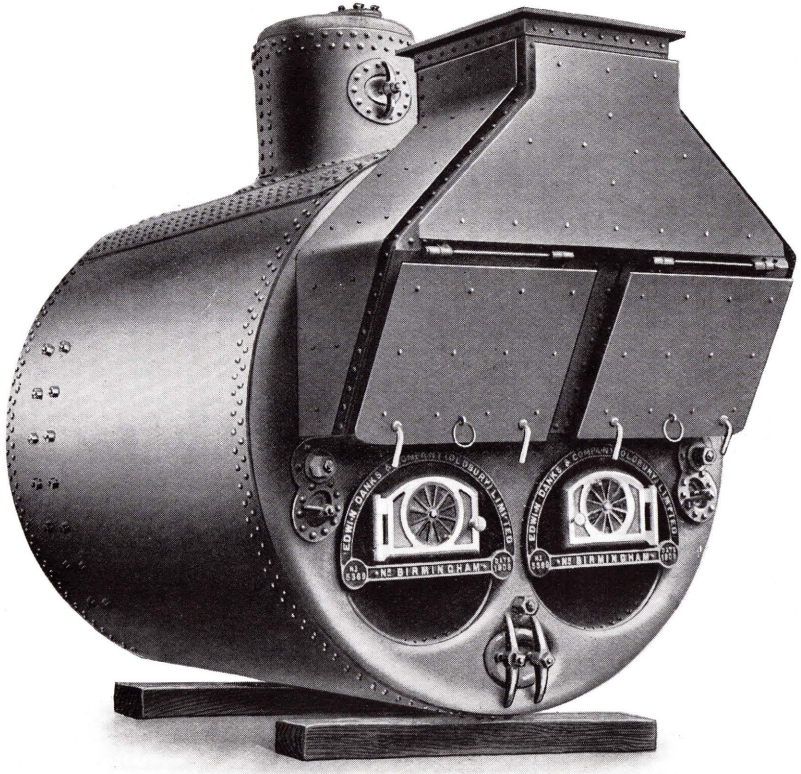
Edwin Danks' Standard Dry-back Marine Boiler.

The Edwin Dan s' Standard Dry-back Marine Boiler is most suitable for conditions where space is limited, and is extensively adopted at pumping plants, hotels, docks, and similar installations.

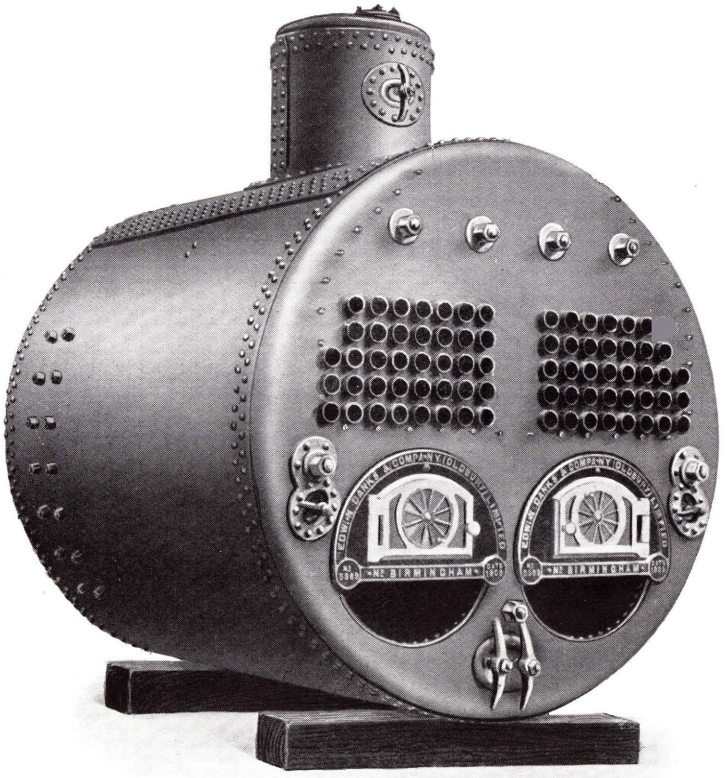
It is a particularly economical steam generator on account of the small proportion of water it contains compared with its large heating surface. It generates steam rapidly, and a perfect combustion of the furnace gases is effected in the fire brick lined combustion chamber, erected at the back of these boilers.

This fire brick under working conditions becomes red hot, and the radiating heat ensures complete combustion of the furnace gases and reduces the amount of smoke to a minimum.

This type of boiler is manufactured for all working pressures up to 200 lbs. per square inch. and in all sizes between 5′ 0″ diameter by 7′ 6″ long, and 10′ 0″ diameter by 15′ 0″ long.



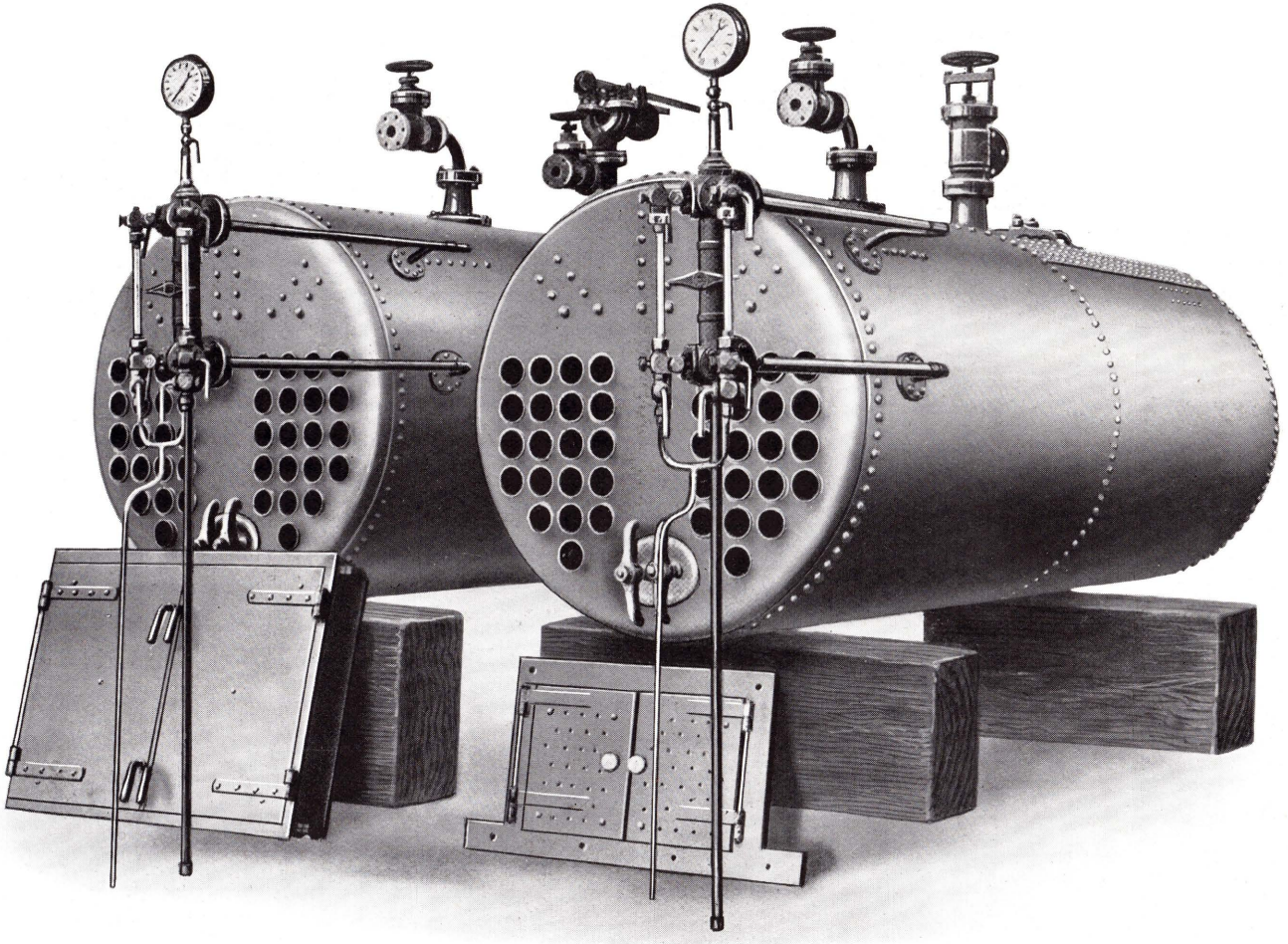
Edwin Danks' Standard Scotch Marine Boiler (with Smoke-box attached).



Edwin Danks' Standard Scotch Boiler (without Smoke-Box).

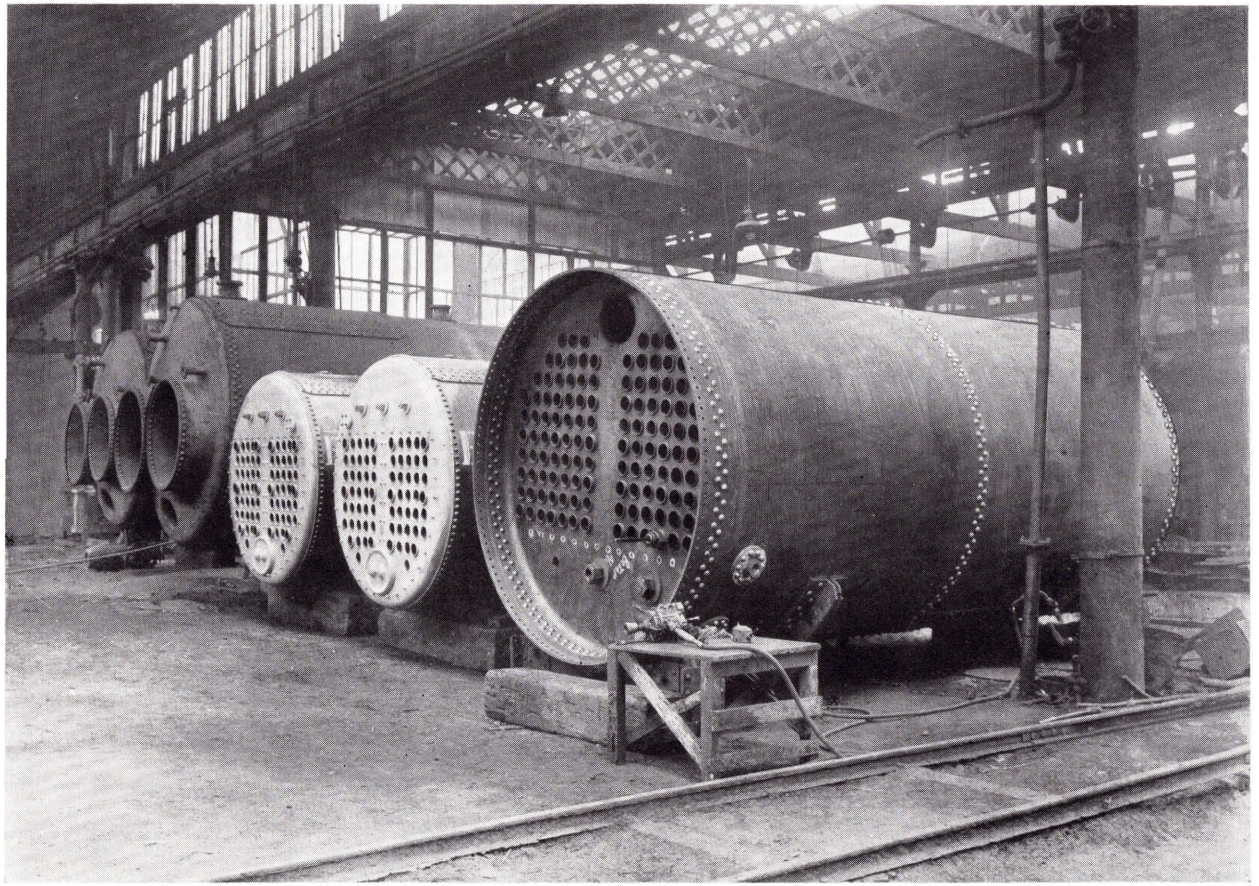
The Standard Scotch Marine Boiler is constructed with a steam dome and two or three furnaces according to size. They are manufactured by Edwin Danks & Co. (Oldbury) Ltd., in sizes up to 10′ 0″ diameter for pressures from 80 lbs. to 200 lbs. per square inch, and are fitted with plain or corrugated furnaces.

Quotations, details and specifications will be submitted on application.

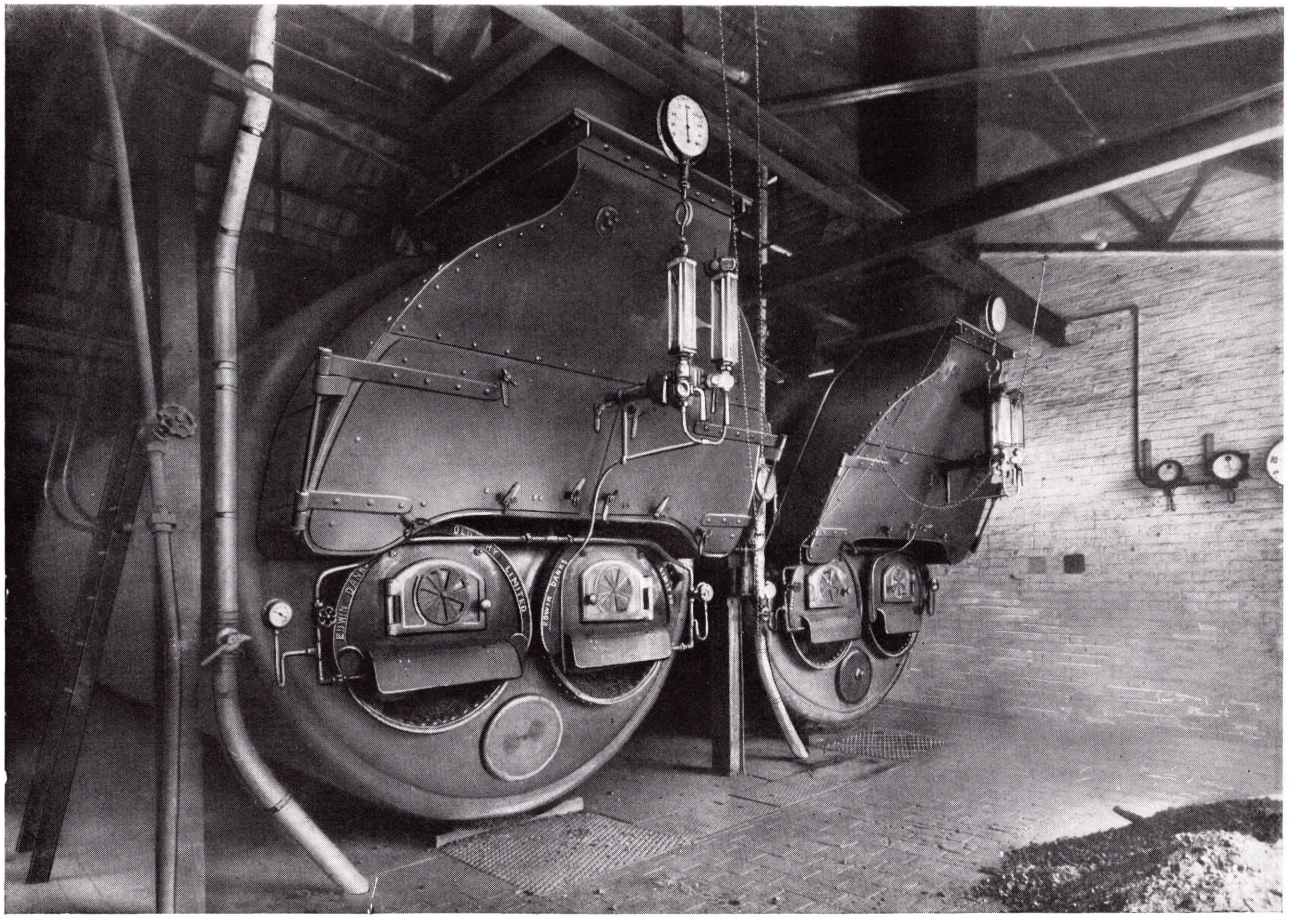


Edwin Danks' Standard Externally-fired Multitubular Boiler.

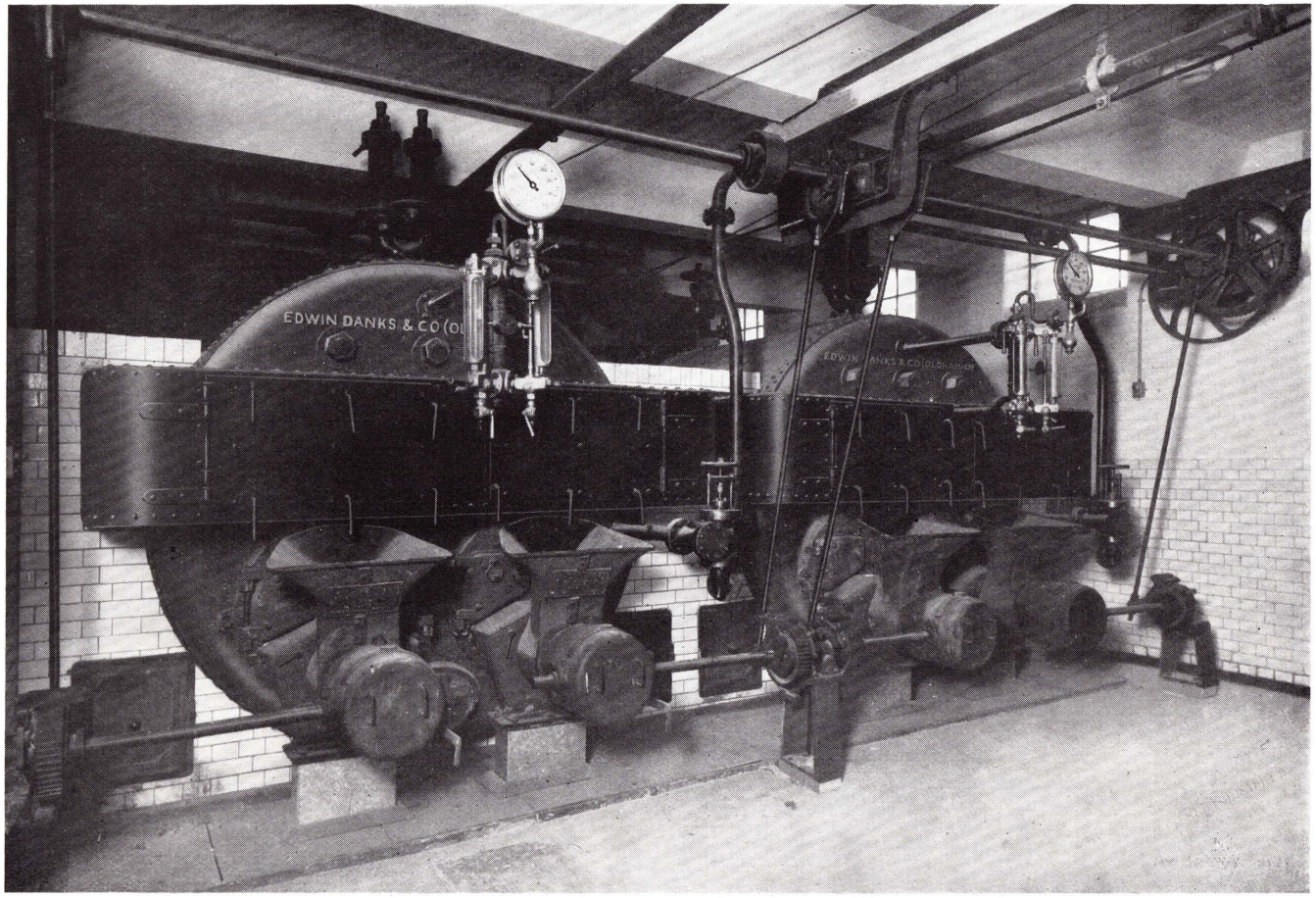
The Externally-fired Multitubular Boiler, manufactured by Edwin Danks & Co. (Oldbury) Ltd., is suitable for use at sugar plantations, saw mills and other places where bulky fuel such as bamboo waste, wood chips, etc., have to be consumed. Full specification and details will be forwarded on application.



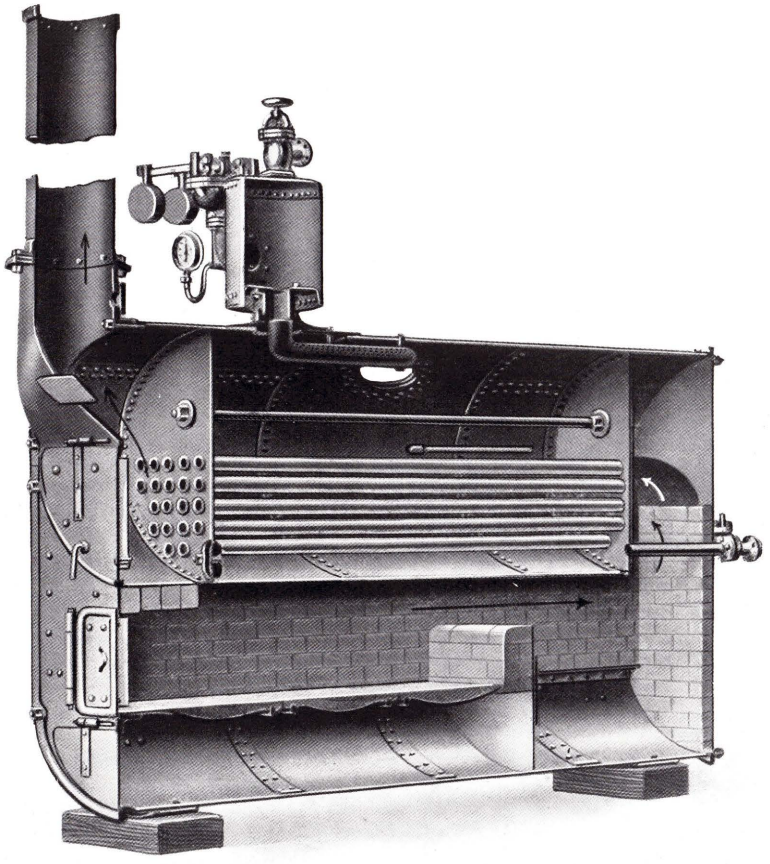
Edwin Danks & Co. (Oldbury) Ltd. *View of Lancashire and Multitubular Boilers in Shop.*



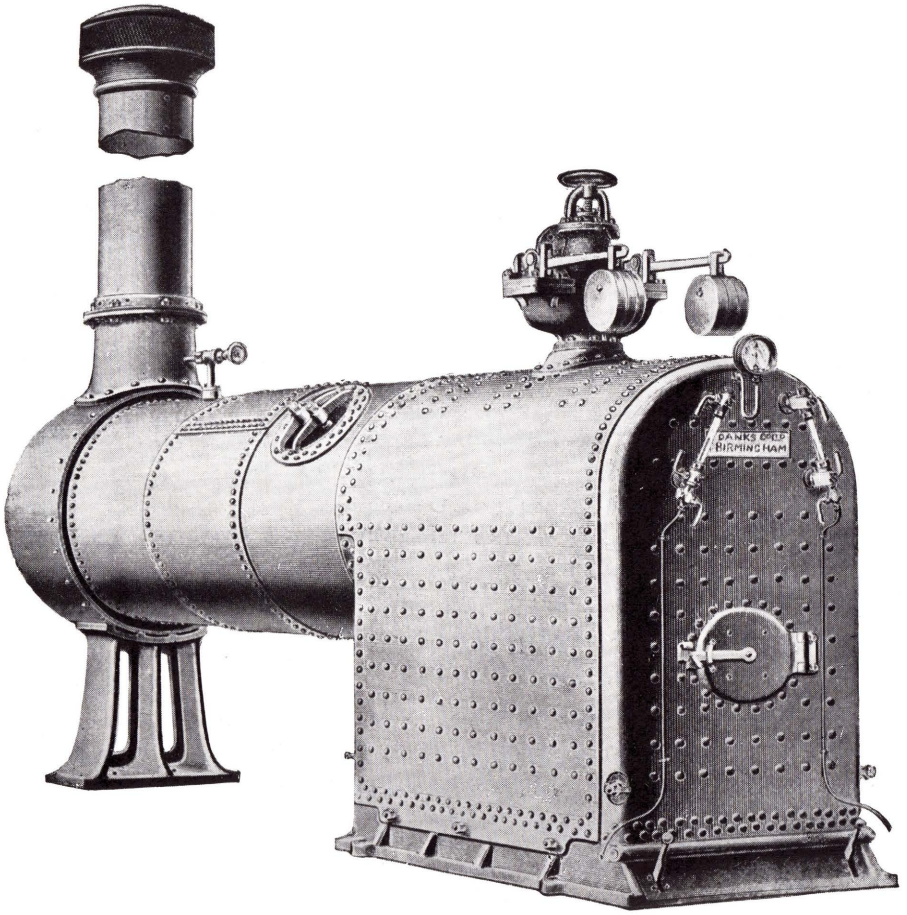
Edwin Danks & Co. (Oldbury) Ltd. *Two Self-contained Economic Boilers installed at a Farm in Surrey.*



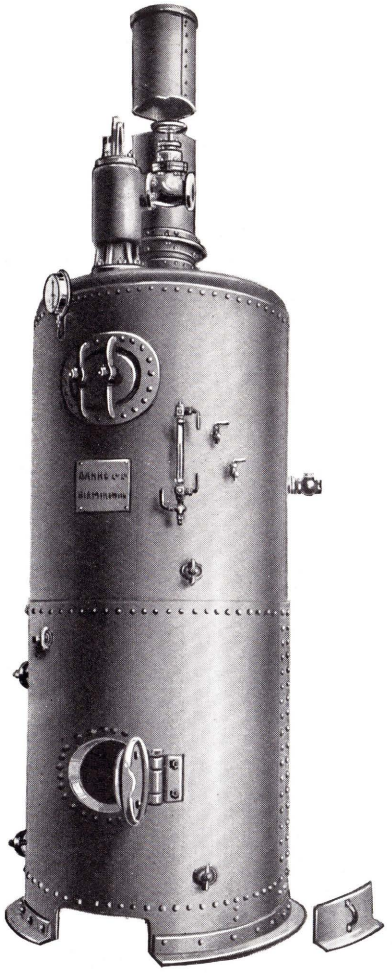
Edwin Danks & Co. (Oldbury) Ltd. *Two Economic (Dry Back) Boilers installed in a London Dairy.*



Edwin Danks' Steel Colonial Tubular Boiler.



Edwin Danks' Loco-Multitubular Boiler.

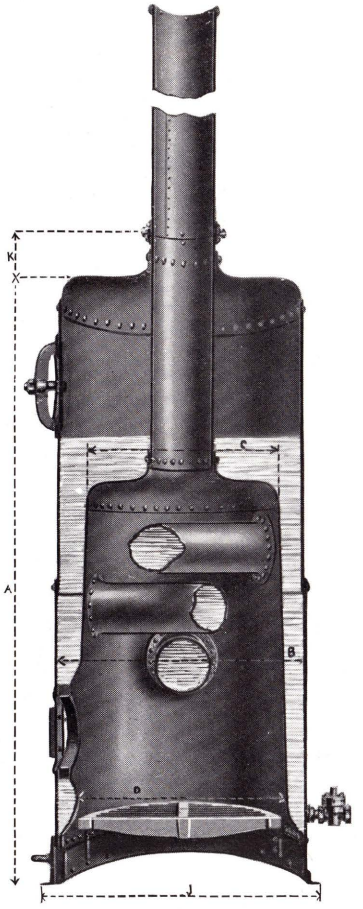


Front Elevation.

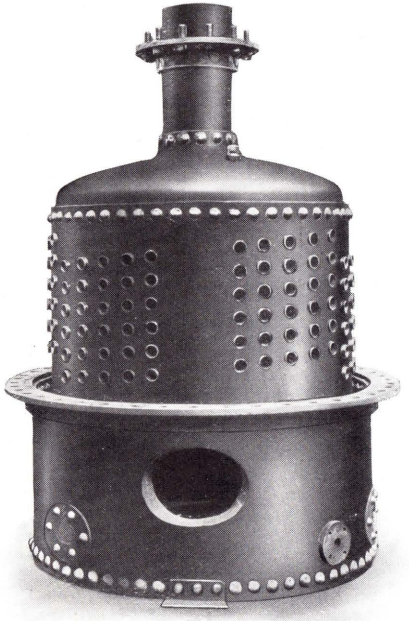
Edwin Danks' Standard Steel Vertical Cross-Tube Boilers are constructed for a daily working pressure of 80 lbs. and 100 lbs. per square inch. The boilers, before despatch, are tested respectively to 160 lbs. and 200 lbs. by hydraulic pressure.

This type of boiler can be constructed for higher pressures when required.

Edwin Danks' Steel Vertical Cross-tube Boilers.



Sectional Elevation.

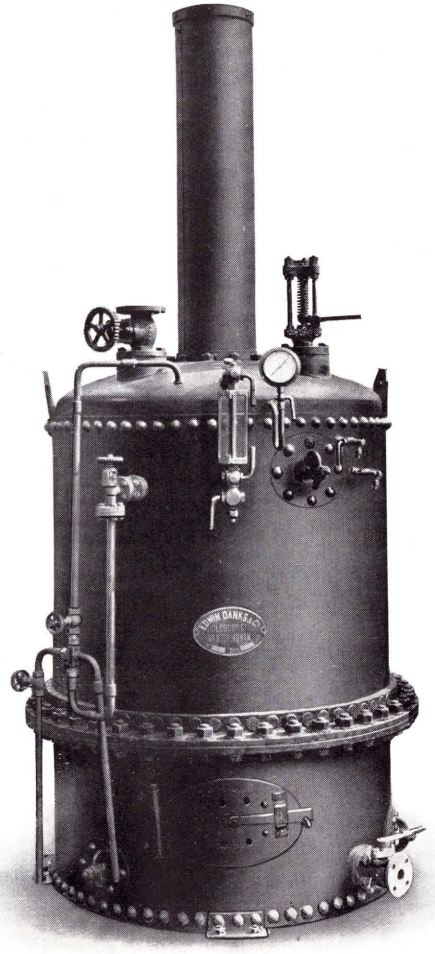


View showing tubes.

Plan of Tubes.

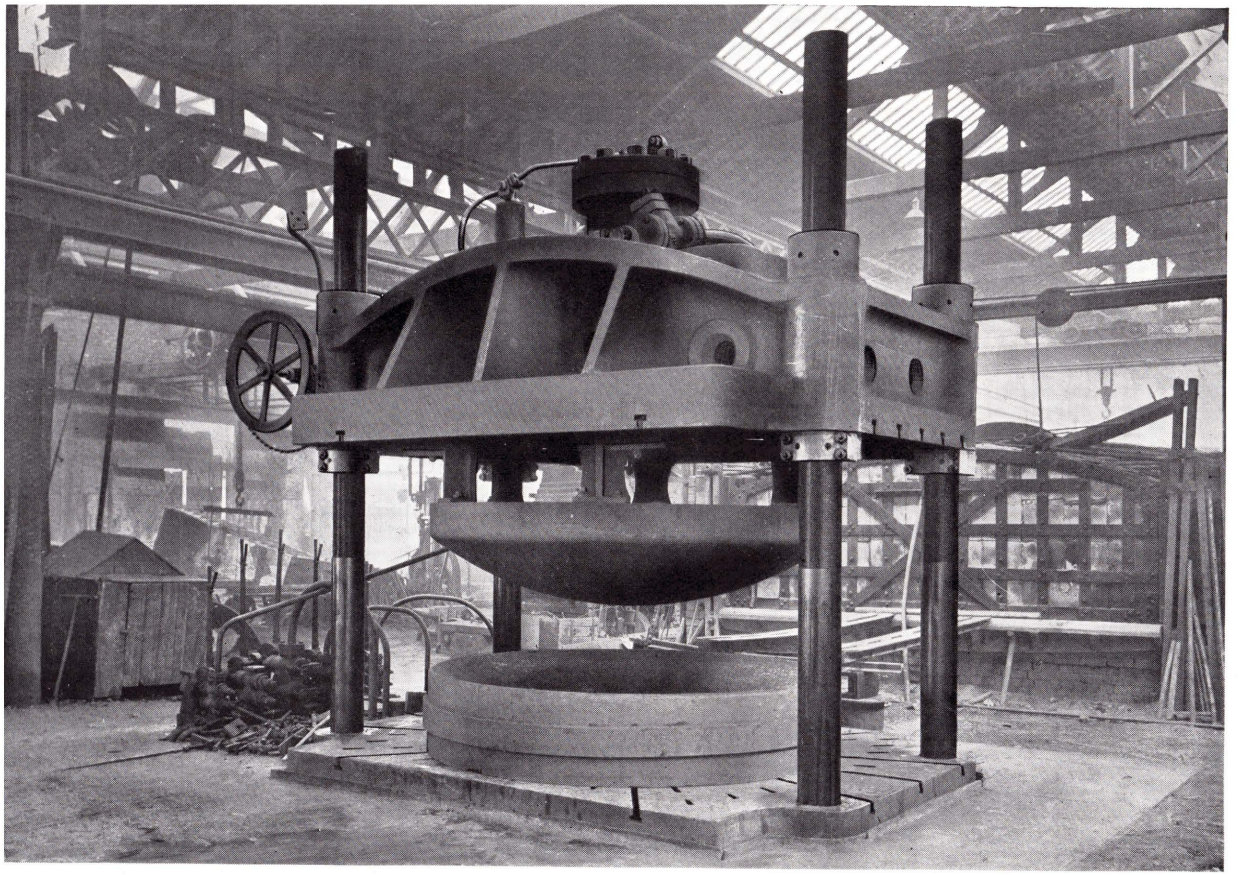
Edwin Danks' Standard Steel Colonial Tubular Boiler is constructed for a daily working pressure of 100 lbs. per square inch, the boiler being tested before leaving the works by hydraulic pressure to 200 lbs.

This type of boiler can be constructed for higher pressures when required.



Front elevation.

Edwin Danks' Vertical Steel Colonial Tubular Boilers.



Edwin Danks & Co. (Oldbury) Ltd. *View of 500-ton Hydraulic Press.*

PRESS WORK

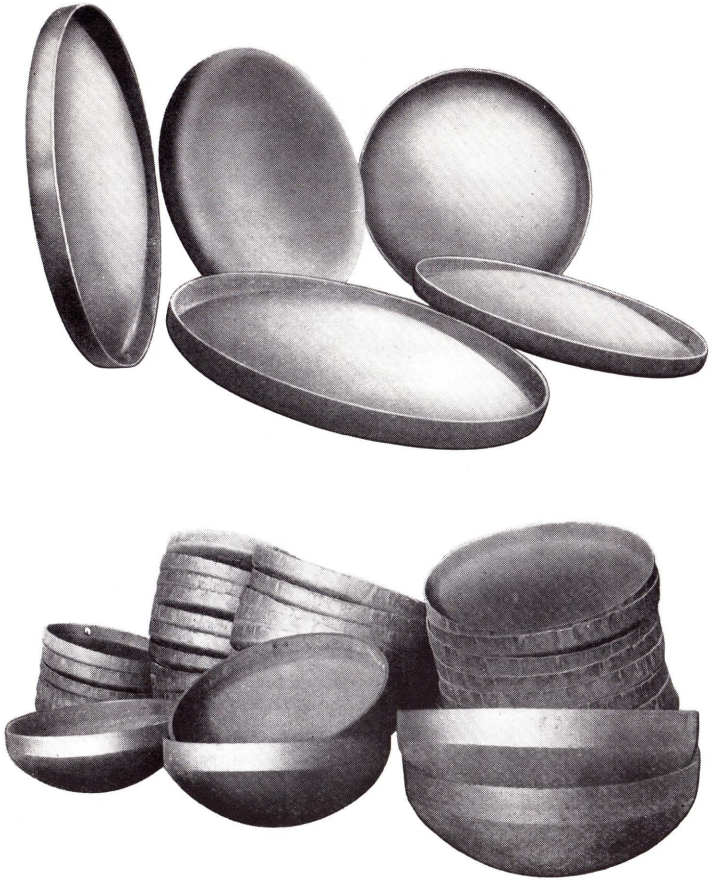
Edwin Danks & Co. (Oldbury) Ltd. have recently installed an additional 500 tons hydraulic press, and are able to undertake press work of all classes. A large range of press tools is available, and the dishing of end plates and similar work can be undertaken at a much lower cost than by processes hitherto employed.

We have in stock special press tools suitable for dishing plates to any required radius.

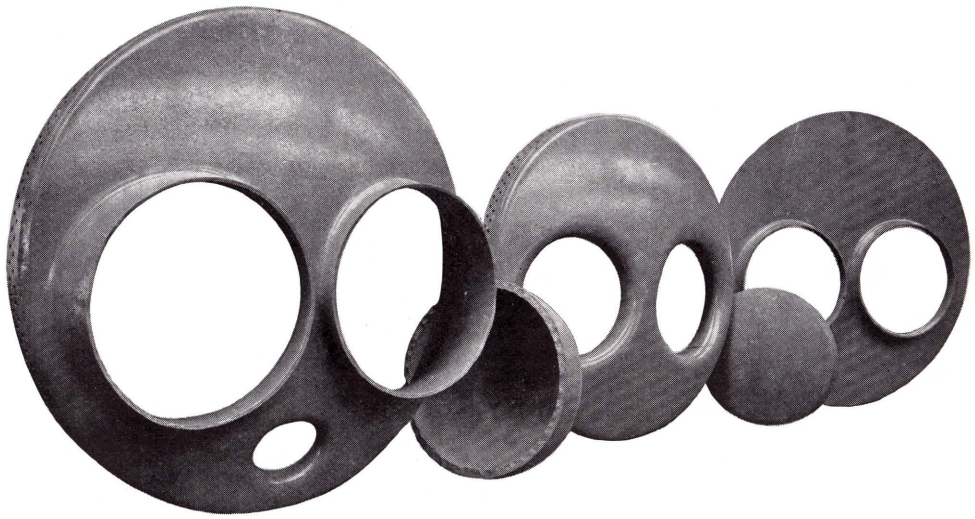
From Untouched Photographs.

Front end of Dish-ended Lancashire Boiler. *Back end of Dish-ended Lancashire Boiler.* *Flanged Drum End.*

Edwin Danks & Co. (Oldbury) Ltd.

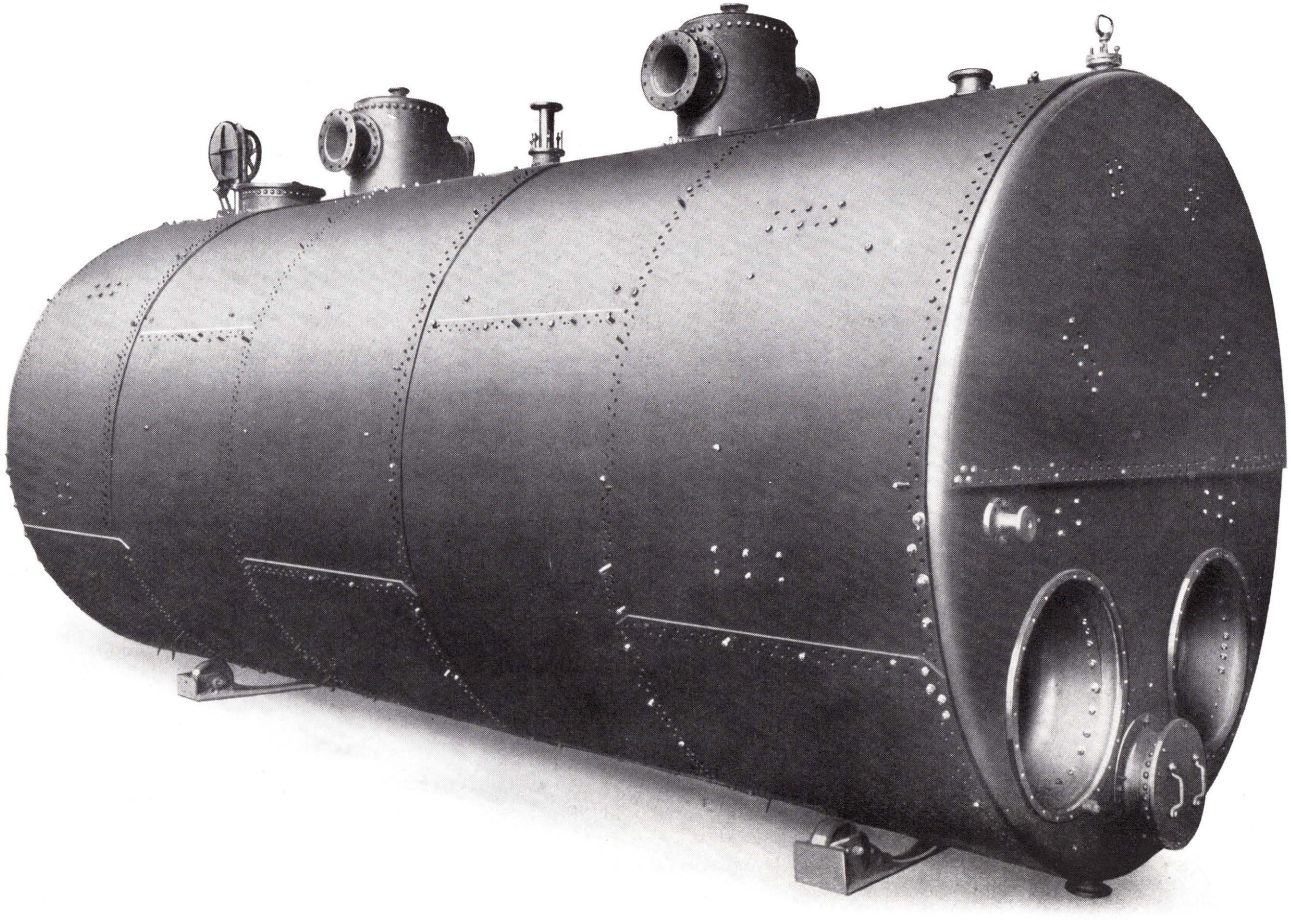


Dished and Flanged Ends for Lancashire and Cylindrical Boilers.
Edwin Danks & Co. (Oldbury) Ltd

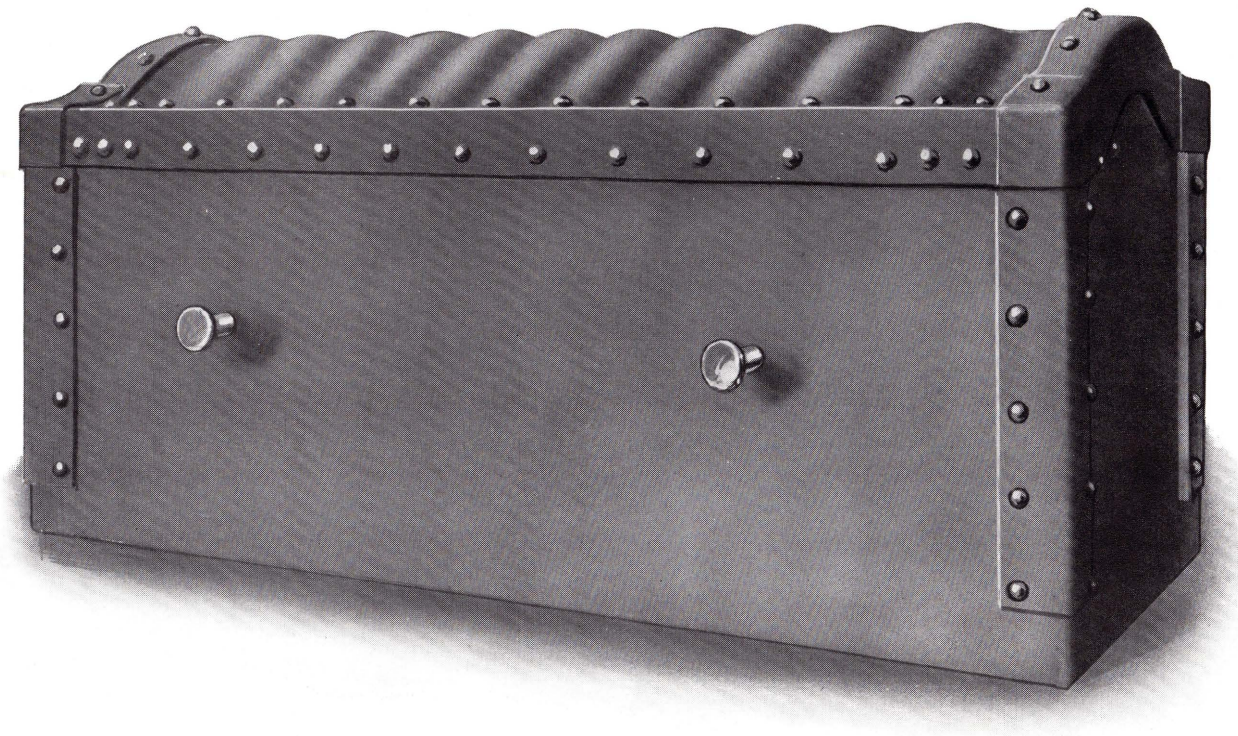


From Untouched Photographs.

Dished, Flanged and Bunged Ends for Lancashire Boilers.
Edwin Danks & Co. (Oldbury) Ltd.



Edwin Danks' Bitumen Separator (assembled in Shop).



Edwin Danks' Corrugated Annealing Cover.

ANNEALING POTS AND COVERS

Amongst the recent investigations of Edwin Danks & Co. (Oldbury) Ltd. are the production of suitable machinery for the manufacture of annealing pots as used in the steel wire trade, and annealing covers for the tinplate industries.

In the steel wire industry the cast iron annealing pot is being largely replaced by the wrought steel pot, owing to the advantages of the latter type. The C.1 pot is heavy, porous and brittle, whereas the W.S. type has none of these disadvantages. Further, the initial cost of the W.S. pots is very much lower. Satisfactory repairs can be made, and those manufacturers who have already adopted it are satisfied that the life of the W.S. pot is considerably longer than the cast iron. The cost of maintenance is consequently very much lower.

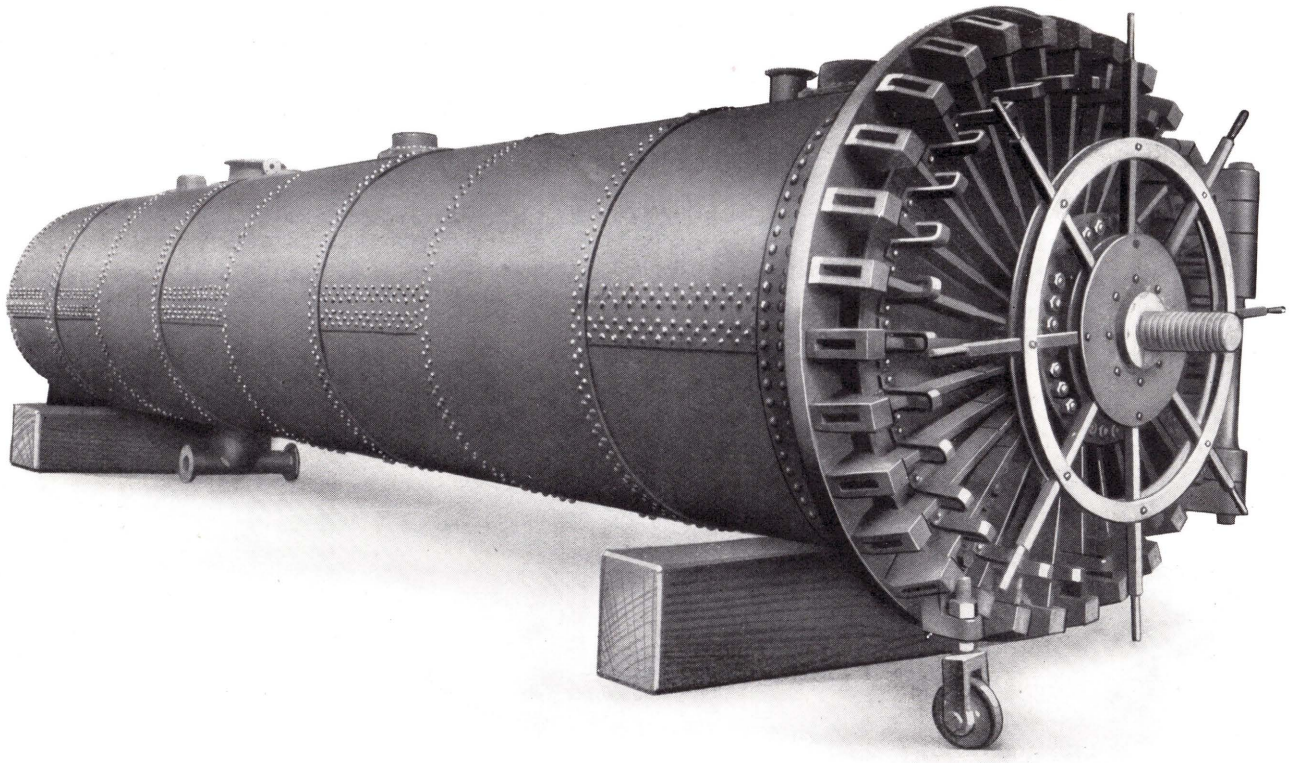
Edwin Danks & Co. (Oldbury) Ltd. are prepared to quote to clients' own designs, or on receipt of detailed requirements would be pleased to submit special designs for their consideration.

For the supply of clients' complete requirements over definite periods, special prices can be quoted.

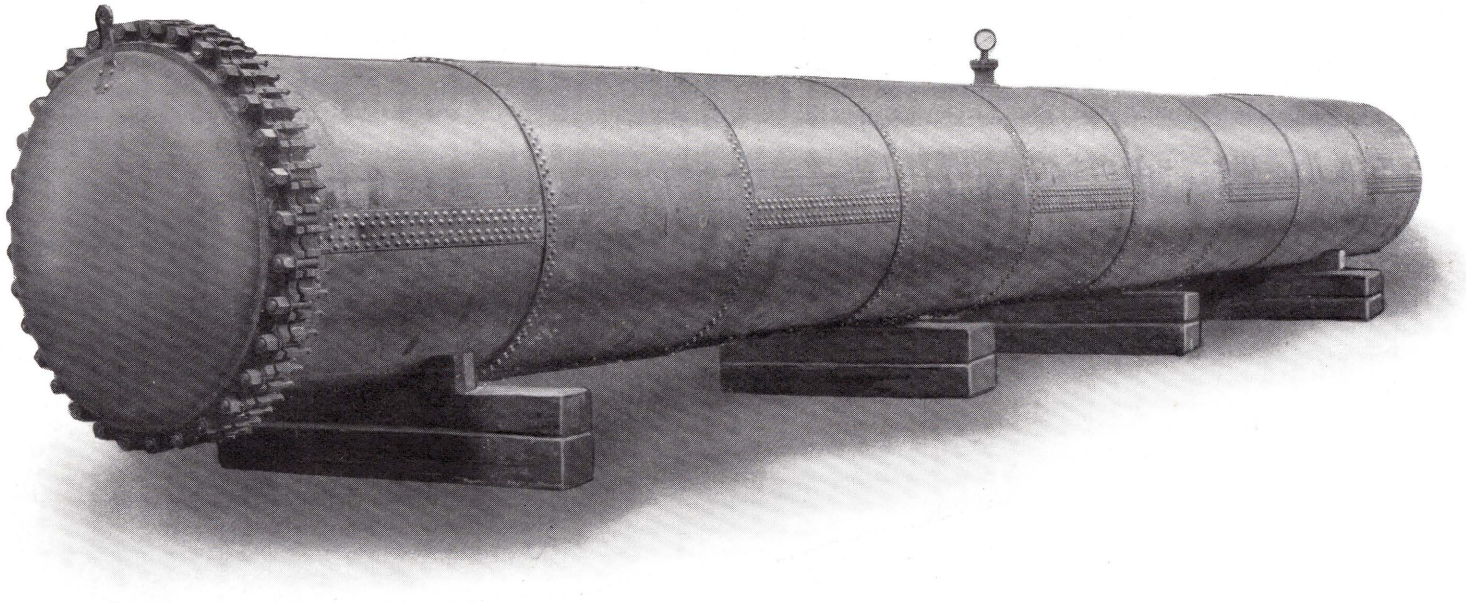
Very large quantities of annealing covers for the tinplate industry have been manufactured, and owing to their experience in this direction they are in a position to quote very favourable prices for covers of thoroughly reliable construction and serviceable and strong in every respect.

Many tinplate manufacturers have already found it profitable to have their old covers which would otherwise have been scrapped, re-conditioned, and Edwin Danks & Co. (Oldbury) Ltd. have been able to undertake this class of work at a comparatively low cost, returning the covers to the owners almost as good as new.

As in the case of annealing pots, they are always only too pleased to work to clients' own design, or to submit special designs for their consideration.



Edwin Danks' Timber Impregnator.

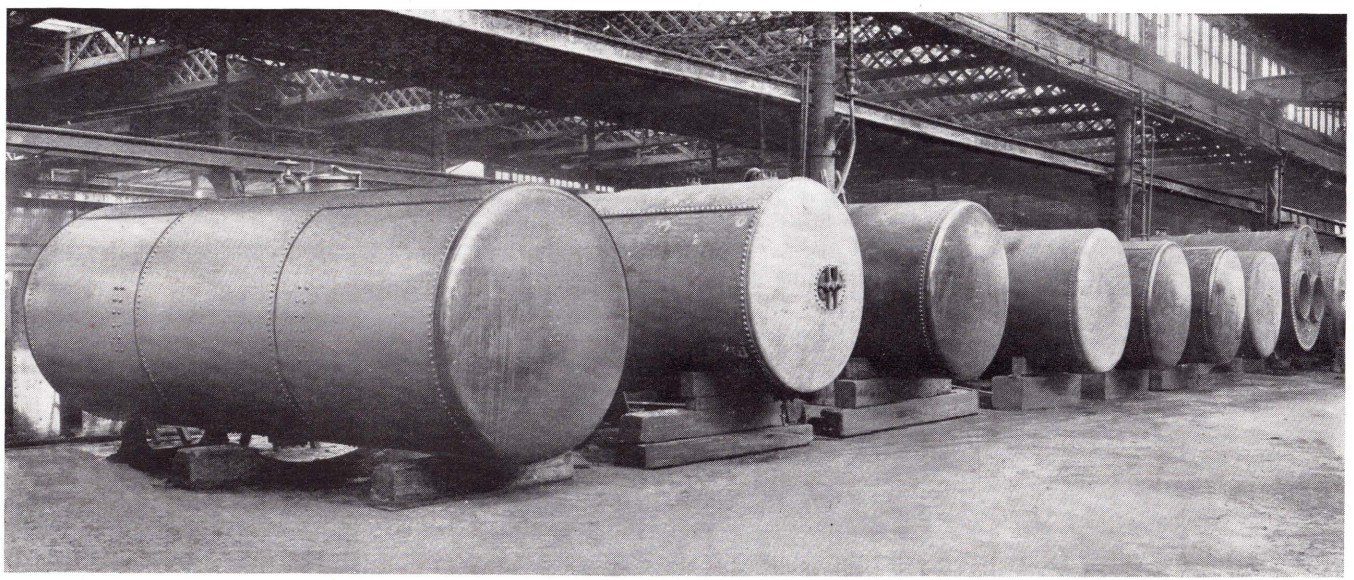


Edwin Danks' Impregnating Cylinder for Hardening Bricks.

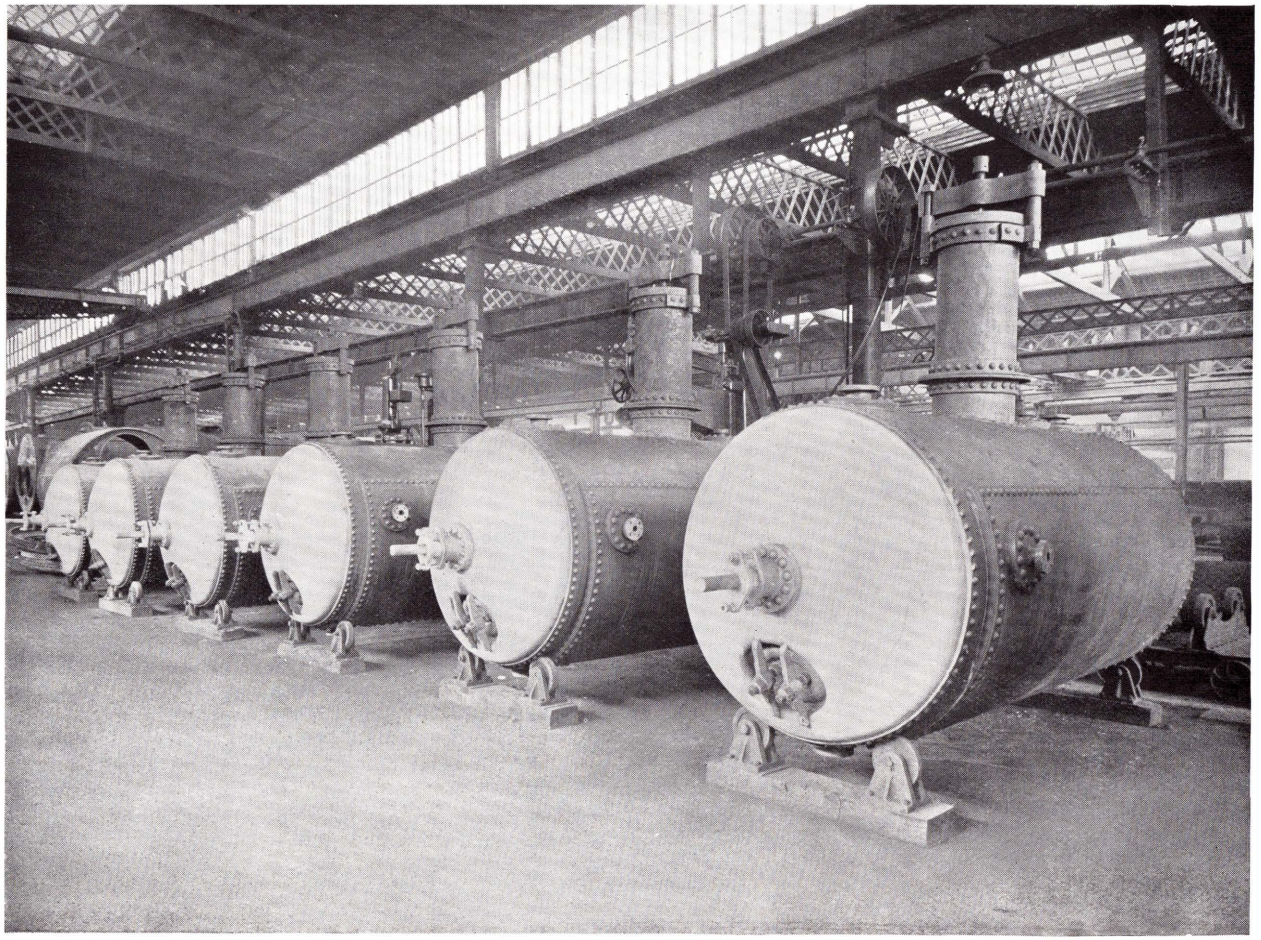
TANKS

Edwin Danks & Co. (Oldbury) Ltd. are specialists in the manufacture of steel tanks of all types, including those of special design for use on railway wagons. All sizes of tanks can be constructed, both for home and export purposes. In the latter case the tanks are always erected completely at the works to ensure a perfect fit and interchangeability of component parts. This is a particularly valuable feature when there are several tanks being built to the same design.

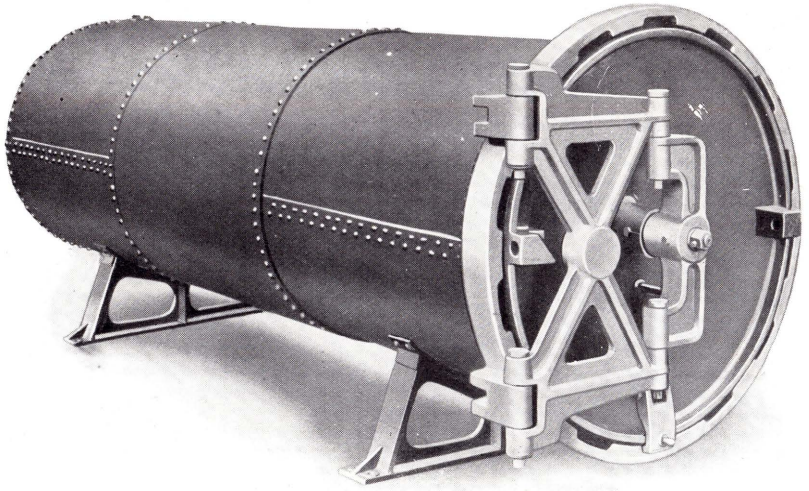
Many special designs of tank or vessel have recently been manufactured for Timber Fireproofing, Rubber Vulcanising, Mixers, Digesters and other special apparatus for Silk Mills, Soap Works, Dye Works, Chemical Works, and other industries, and enquiries relating to special constructions of this description are cordially invited.



Edwin Danks & Co. (Oldbury) Ltd. *Railway Tank Wagons. Part of order for 150 Tanks.*

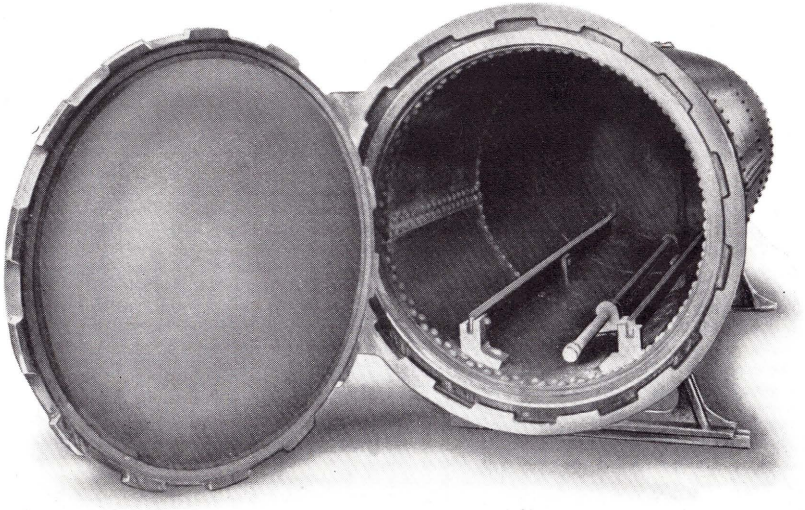


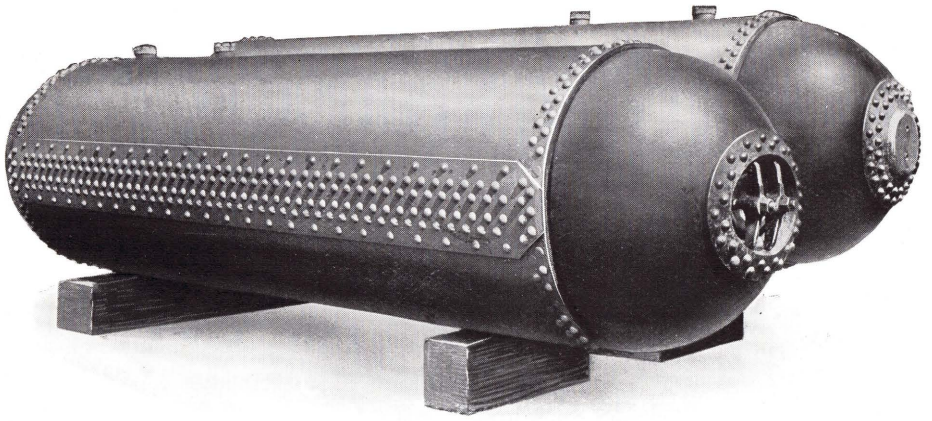
Edwin Danks & Co. (Oldbury) Ltd. *Mixers for Silk Mills.*



Edwin Danks' Rubber Vulcanizer.

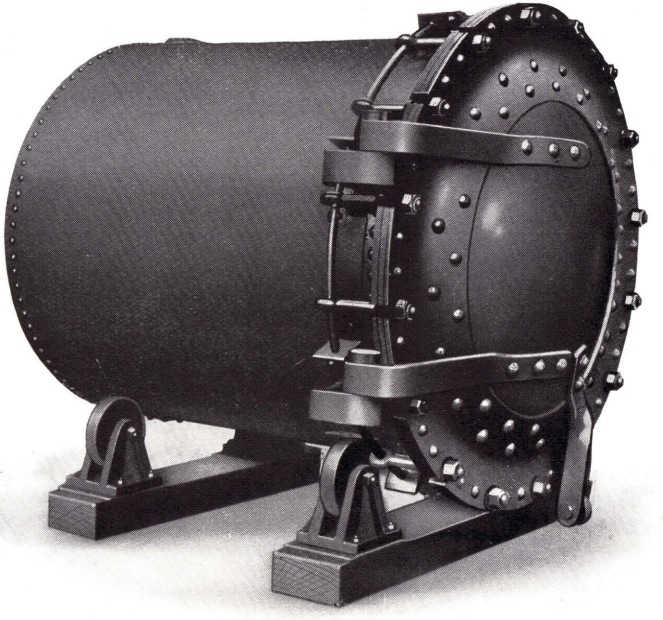
Edwin Danks' Rubber Vulcanizer
(View showing Vulcanizer open).



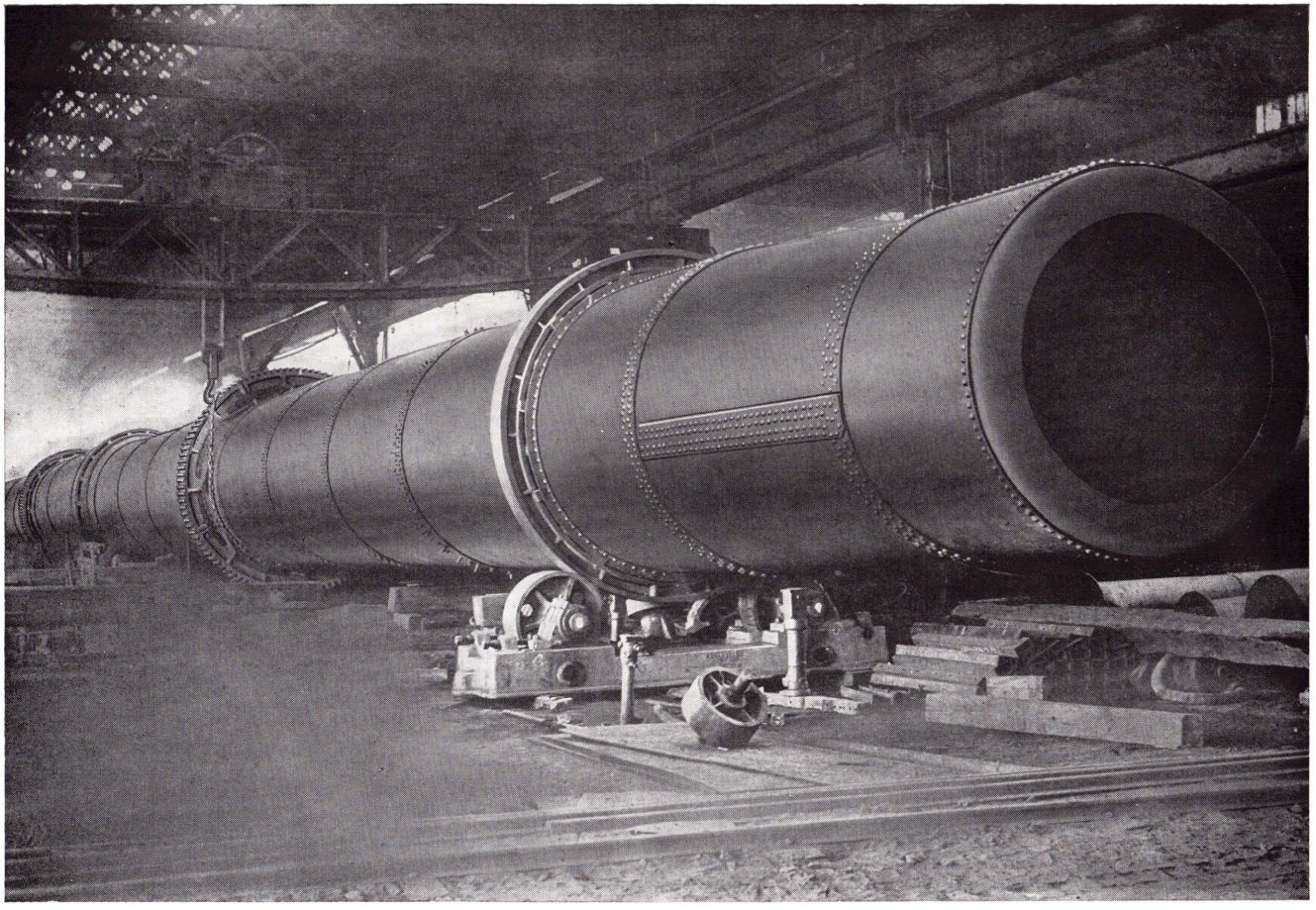


Edwin Danks' Receivers—
Test Pressure, 1,500 lbs. per sq. inch.

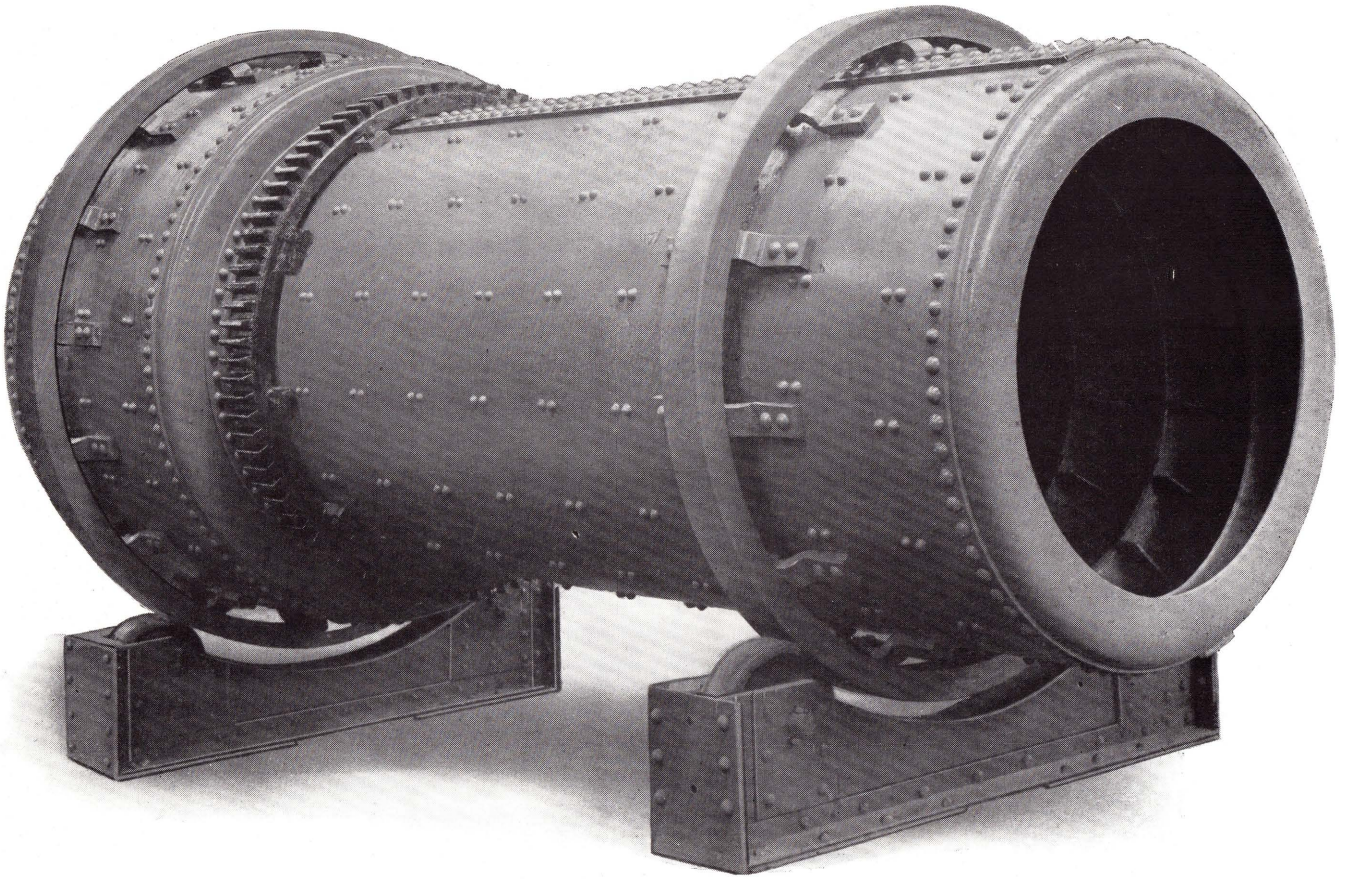
Air, Oil and Steam Receivers for high working pressures are specialities of Edwin Danks & Co. (Oldbury) Ltd. The same high standards of workmanship and material are introduced in this work as are to be found in their boilers, and consequently these are guaranteed to give as complete satisfaction.



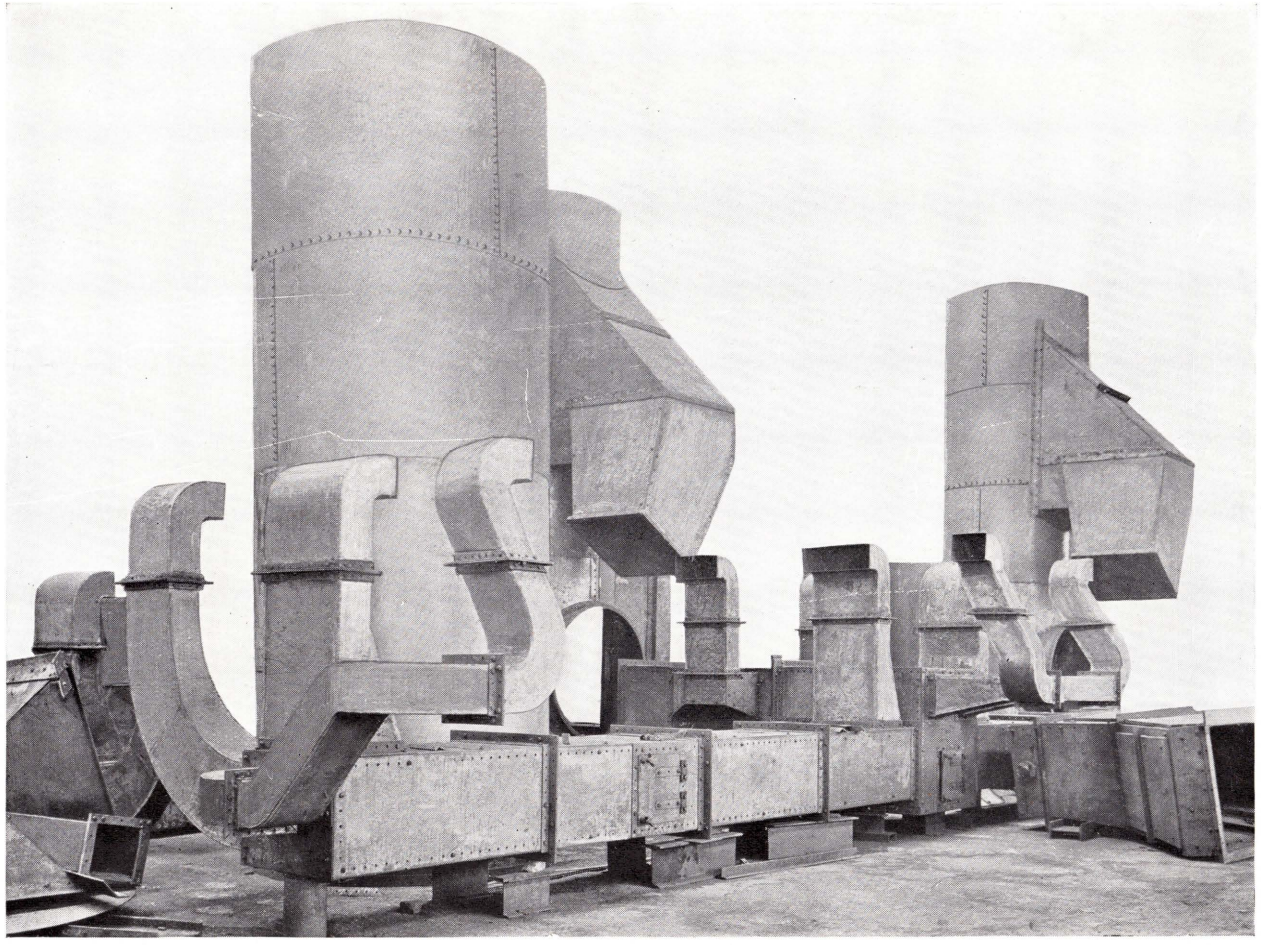
Edwin Danks' Rubber Vulcanizer.



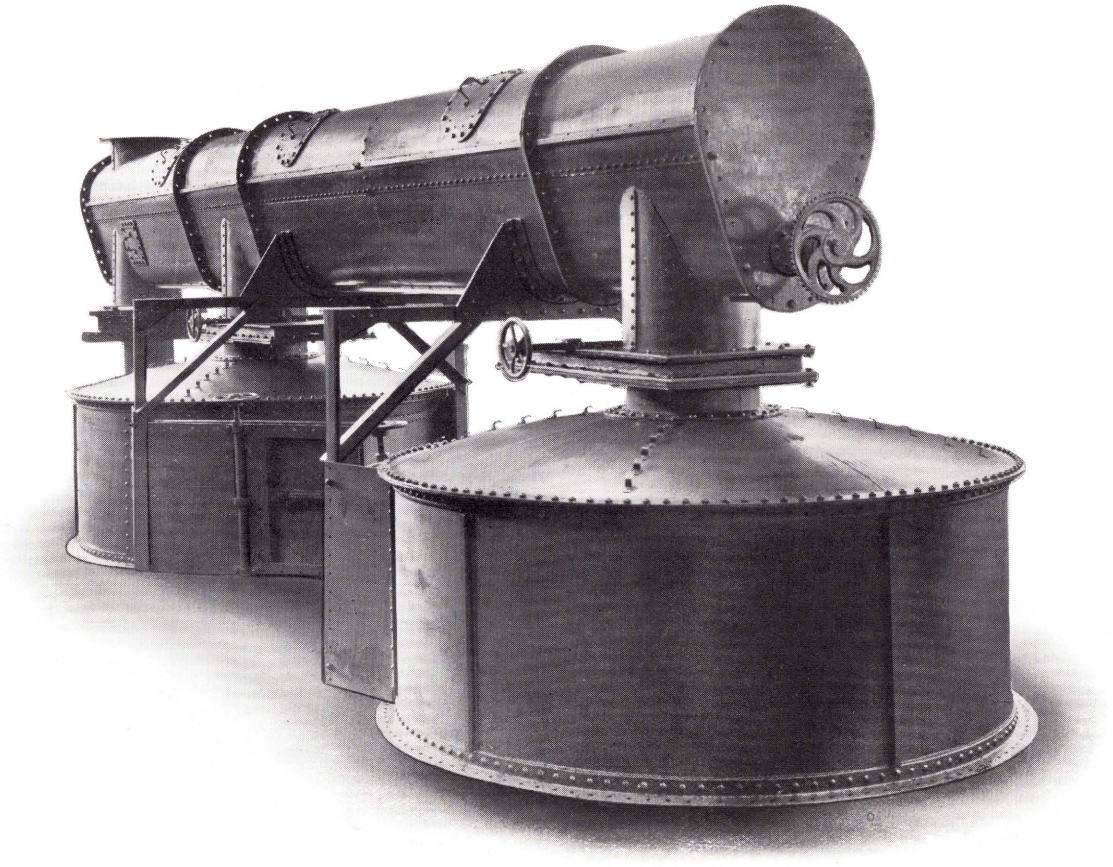
Edwin Danks' Cement Kiln, 140 feet long, 7 feet 6 inches in diameter.



Edwin Danks' Coal Washer.

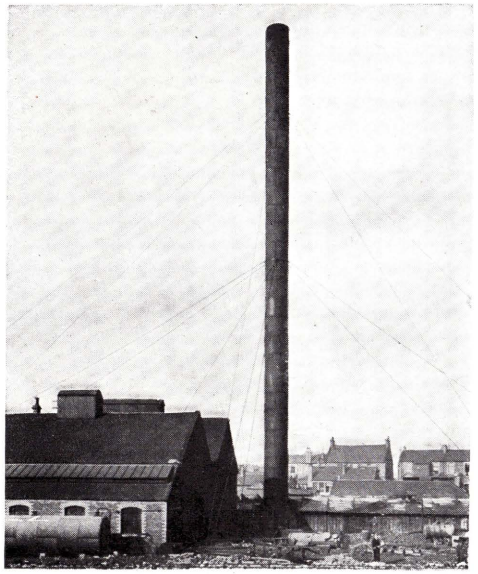


Edwin Danks' Chimneys and Air Ducts in course of Erection.



Edwin Danks & Co. (Oldbury) Ltd. *Gas Mains.*

STEEL STAYED CHIMNEYS



Steel Stayed Chimney.

Edwin Danks & Co. (Oldbury) Ltd. Steel Stayed Chimneys are carefully made from good quality steel plate, each tier being rolled, drilled, and the whole fitted together and marked for erection on site.

For use in this country steel stayed chimneys are riveted up in lengths, with angle irons riveted on, and provided with bolt holes and bolts for joining the sections together. The base is constructed of wrought steel or cast iron, with suitable foundation bolts, while bands are riveted round the chimneys at convenient height for the attachment of such guy ropes as may be necessary. All guy ropes are furnished, complete with rings, turn buckles screws and anchorage plates.

SELF-SUPPORTING STEEL CHIMNEYS

For the larger sizes of chimneys, and particularly where the use of guy ropes is impracticable, self-supporting chimneys are used.

The designs adopted by Edwin Danks & Co. (Oldbury) Ltd., are arranged to withstand the highest wind pressure and are constructed of mild steel plates, with horizontal seams, double riveted in the lower tiers of the plates.

All chimneys are coned at the base, and tapered gradually to the top, being finished either with a plain or ornamental cap. The base is constructed of cast iron sections, strongly ribbed and bolted together, and furnished with large bolts and anchorage plates for building in the brick or concrete foundations.

A wrought steel sectional ladder is provided for bolting securely to the outside of the chimney.

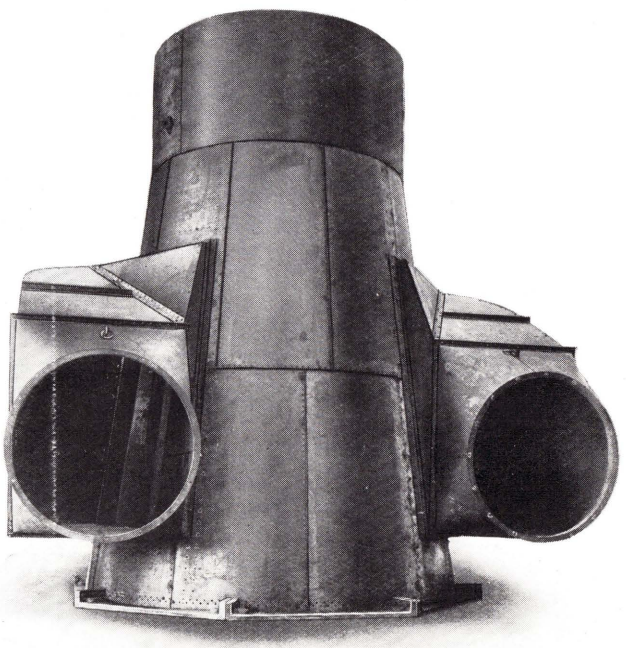
In all cases where chimneys have to be erected abroad, the plates are sent from the works nested together, all marked for erection on the site, together with all necessary rivets and riveting apparatus. Detailed drawings and complete instructions for erecting are sent out with each chimney.

All chimneys are provided with pulleys at the top, with wire ropes attached, for use when painting or examining the exterior.

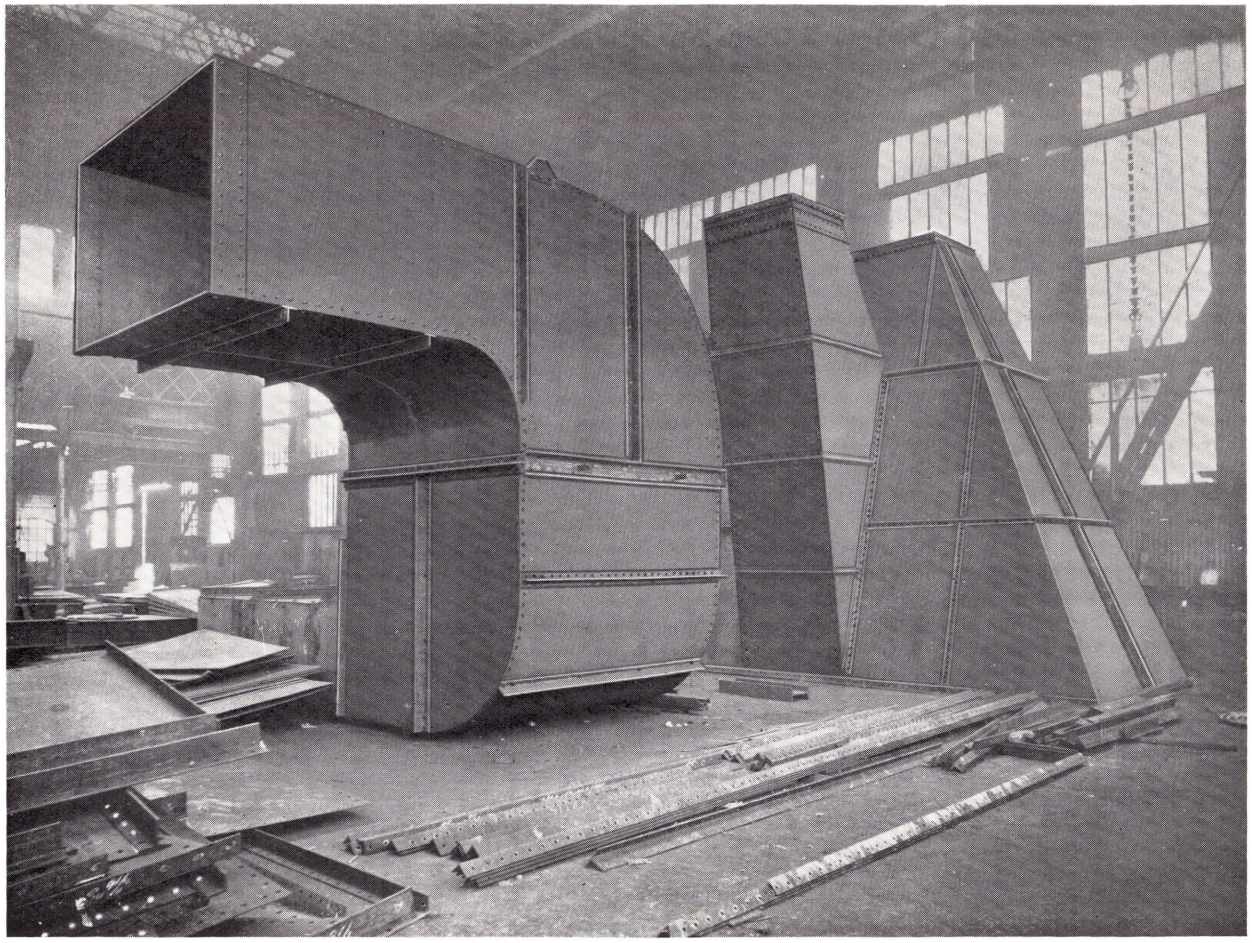
In place of the customary cast iron bell-mouthed top, Edwin Danks & Co. (Oldbury) Ltd. have recently produced a cap made in pressed steel.

One of the many special advantages of this design over the cast iron top is a very considerable reduction in weight, which appreciably reduces the cost of freight.

Designs and estimates will be forwarded to prospective purchasers on receipt of the necessary particulars.



Base of Self-supporting Chimney with draught inlets.



Edwin Danks & Co. (Oldbury) Ltd. *View of Structural Shop, showing Flues.*

STEEL STAYED CHIMNEYS

SIZE OF CHIMNEY.				
DIAMETER.		HEIGHT.		CODE WORD.
Ft. In.	m/m	Ft.	Metres.	
1 2	355	30	9·144	YIMBLEAU
1 2	355	35	10·668	YIMBLOT
1 8	508	40	12·192	YIMBOLIZO
2 0	610	50	15·240	YIMEAO
2 2	660	60	18·288	YIMENUS
2 10	864	65	19·812	YIMEONITE
3 0	914	70	21·336	YIMFORIA
3 6	1,066	80	24·384	YIMIADES
4 0	1,219	80	24·384	YIMIANO
4 6	1,371	80	24·384	YIMIENZA
4 6	1,371	90	27·432	YIMILAGO
5 0	1,524	100	30·480	YIMILAIRE
5 0	1,524	125	38·100	YIMILIMO
5 0	1,524	150	45·720	YIMININOS
5 6	1,676	100	30·480	YIMIOLOS
5 6	1,676	125	38·100	YIMIOLUM
5 6	1,676	150	45·720	YIMITARS
6 0	1,829	100	30·480	YIMMETRIA
6 0	1,829	125	38·100	YIMOEIS
6 0	1,829	150	45·720	YIMOENTA
6 6	1,981	100	30·480	YIMOENTIS
6 6	1,981	125	38·100	YIMOKATTA
6 6	1,981	150	45·720	YIMONIDIS
7 0	2,133	100	30·480	YIMONIOUS
7 0	2,133	125	38·100	YIMONISCHE
7 0	2,133	150	45·720	YIMONIST
7 6	2,286	100	30·480	YIMOONS
7 6	2,286	125	38·100	YIMOTES
7 6	2,286	150	45·720	YIMPATIA
8 0	2,438	100	30·480	YIMPATICO
8 0	2,438	125	38·100	YIMPELIG
8 0	2,438	150	45·720	YIMPLACHO

SELF-SUPPORTING STEEL CHIMNEYS

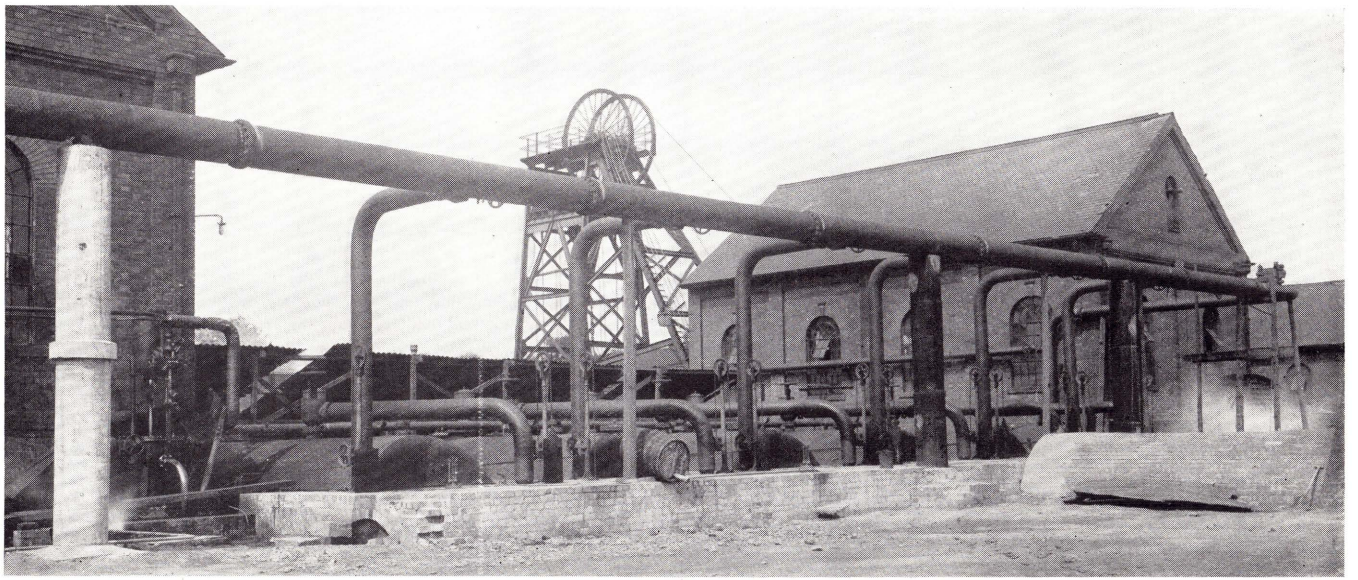
SIZE OF CHIMNEY.				
DIAMETER		HEIGHT.		CODE WORD
Ft. In.	Metres.	Ft.	Metres.	
5 0	1·524	100	30·480	YIMPLARIS
5 0	1·524	125	38·100	YIMPLES
6 0	1·829	100	30·408	YIMPLEZA
6 0	1·829	125	38·100	YIMPLICES
6 6	1·981	125	38·100	YIMPLICIO
6 6	1·981	150	45·720	YIMPLIFIER
7 0	2·133	125	38·100	YIMPLISME
7 0	2·133	150	45·720	YIMPLISTIC
8 0	2·438	125	38·100	YIMPLO
8 0	2·438	150	45·720	YIMPLORIO
9 0	2·743	125	38·100	YIMPOSICA
9 0	2·743	150	45·720	YIMPOSIO
9 0	2·743	175	53·340	YIMPTOSI
10 0	3·048	125	38·100	YIMPULUM
10 0	3·048	150	45·720	YIMSCHEN
10 0	3·048	175	53·340	YIMSIME
11 0	3·352	125	38·100	YIMSWERK
11 0	3·352	150	45·750	YIMUL
11 0	3·352	175	53·340	YIMULADA
12 0	3·657	125	38·100	YIMULAMES
12 0	3·657	150	45·720	YIMULARAN
12 0	3·657	175	53·340	YIMULASSI

PIPEWORK

Edwin Danks & Co. (Oldbury) Ltd. are specialists in the manufacture of pipework in connection with steam raising installations, and are in a position to supply everything necessary, either to connect to existing plant, or for equipping entirely new installations.

Their experience embraces every class of pipework for steam, water, oil and other purposes, and they are able therefore to guarantee satisfaction.

Pipework drawings and quotations will be willingly prepared on application.



Edwin Danks & Co. (Oldbury) Ltd. *Range of Pipework at Colliery.*

STRUCTURAL WORK

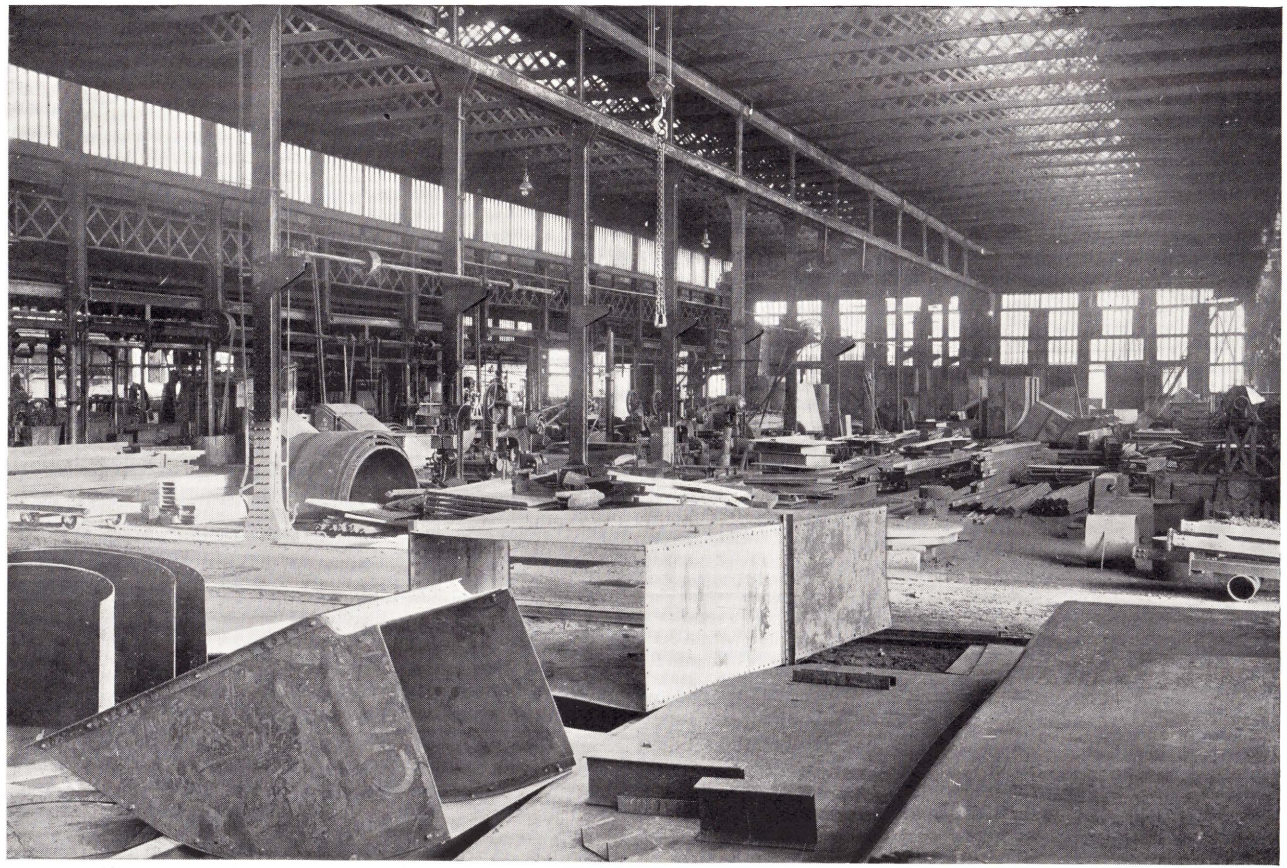
One of the special branches of work on which Edwin Danks & Co. (Oldbury) Ltd. have recently concentrated, and for which enlarged accommodation has been provided, is the manufacture of steel structural work, more particularly that portion connected with boiler houses and steam raising plant.

The works are thoroughly equipped for the manufacture of all heavy and light steelwork, such as columns, girders, roof trusses, coal and ash bunkers and similar work. One of the large structural bays is 460 feet long by 55 feet wide, which enables the Firm to undertake work of practically any magnitude, such as would be impossible in a small shop.

It is practically impossible to enumerate in detail every class of structural work manufactured, but in general it can be taken that facilities exist for dealing with almost all requirements, and enquiries from prospective clients are cordially invited.

BRICKWORK

Edwin Danks & Co. (Oldbury) Ltd., undertake the preparation of the foundations and brickwork, as well as the boiler seating in accordance with the most up-to-date methods. Where clients find it more convenient to have this work carried out by their own contractors, Edwin Danks & Co. (Oldbury) Ltd. are prepared to supply all the necessary plans and drawings to enable them to carry out this work. Enquiries are cordially invited, and all possible assistance will be given to assist clients in these matters.



Edwin Danks & Co. (Oldbury) Ltd. *General View of Structural Shop.*

ERECTION

Edwin Danks & Co. (Oldbury) Ltd. maintains a specially organized staff for the placing of boilers on seatings and where required are prepared to submit quotations for the carrying out of this work. They are also in a position to undertake the erection of all steelwork and will be pleased to submit competitive prices for this work.

BOILER REPAIRS

Edwin Danks & Co. (Oldbury) Ltd. have established a special Maintenance Department, completely organised and equipped for the purpose of providing a quick and efficient repair service in any part of the country at very short notice.

The personnel of this Department is composed of highly skilled engineers and boiler makers, who have had many years' experience of this class of work. Fully qualified technical representatives will be pleased to call upon clients at any time in order to give them expert advice in connection with any problems relating to repair work and affecting their installations.

Cases often arise in which clients are faced with repair problems apparently presenting very considerable difficulty, and on these occasions the expert assistance Edwin Danks & Co. (Oldbury) Ltd. are able to offer has proved of the greatest possible value. All enquiries relating to this class of work will receive the promptest possible attention.

Replacing Furnace in Lancashire Boiler.

INDEX

	Page
Annealing Pots and Covers	45
Boiler Repairs	63
Brickwork	61
Chimneys, Self-Supporting	57
,, Steel-Stayed	56
,, Sizes of	59
Cornish Boilers, Specification of	27
,, ,, Standard Sizes of	25
Erection	63
Foreword	5
Lancashire Boilers, Dish-Ended, Specification of ...	21
,, ,, ,, Seating Particulars ...	24
,, ,, Flanged-Ended	17
,, ,, Specification of Flat-Ended (Angle-ring)	13
,, ,, Standard Sizes	11
List of Manufactures	2
Pipework	60
Press Work	41
Structural Work	61
Tanks	48
Waste Heat Cylindrical Boilers	8, 9

ILLUSTRATIONS

	Page
Annealing Covers	44
Bitumen Separator	43
Cement Kiln	52
Chimneys and Air Ducts in Course of Erection ...	54
,, Self-Supporting	57
,, Steel Stayed	56
Coal Washer	53
Colonial Tubular Boiler, Sectional View...	36
,, ,, ,, Vertical Steel	39
Cornish Boilers, Standard Dish-Ended	26
,, ,, ,, ,, ,, Construction of ...	28
,, ,, ,, Flat-Ended ,, ,, ...	29
Corrugated Annealing Cover	44
Cross-Tube Boiler, Steel Vertical	38
Cylindrical Boiler, Special 3-Flue, for Waste Heat ...	8
Cylindrical Boiler, Special 5-Flue, for Waste Heat ...	9
Economic Boilers installed on a Farm in Surrey ...	34
,, ,, (Dry Back) installed in a London Dairy	35
Flues in Course of Construction	58
Gas Mains	55
Hydraulic Press, View of 500 Ton	40
Impregnating Cylinder for Hardening Bricks	47
Lancashire and Multitubular Boilers in Shops ...	33
Lancashire Boiler Flat-Ended (Angle-Ring)	10, 12
,, ,, Dish-Ended	10, 20
,, ,, ,, ,, Construction of Standard	22
,, ,, ,, ,, Standard Seating for ...	23
Lancashire Boiler Flanged-Ended, Inverted	18
,, ,, ,, ,, Construction of Standard	19
,, Flat-Ended (Angle-Ring), Construction of	14
,, ,, ,, ,, ,, Standard Seating	15
Lancashire Boiler Mounted on Truck	7
,, ,, Replacing Furnace	63
Lancashire Boilers, Flat-Ended and Dish-Ended ...	10
Loco-Multitubular Boiler	37
Marine Boiler, Standard Dry-Back	30
,, ,, ,, Scotch (with smoke box attached)	31
,, ,, ,, ,, (without smoke box) ...	31
Multitubular Boiler, Standard, Externally Fired ...	32
Oldbury Works, Boiler Shop, Looking East	6
,, ,, ,, Structural Shop	62
,, ,, Mixers for Silk Mills	49
,, ,, View From Air	4
Pipework	60
Press Work, Dished, Flanged and Bunged Ends for Lancashire Boilers	42
Press Work, Flanged Drum End	41
,, ,, Front and Back-ends of Dish-ended Lancashire Boilers	41
Railway Tank Wagons	48
Receivers	51
Rubber Vulcanisers	50, 51
Timber Impregnator	46